

Howard Law Journal
Winter 2005

Symposium Intellectual Property and Social Justice

Article

***685 UNSETTLED EXPECTATIONS IN PATENT LAW: FESTO AND THE MOVING TARGET
OF CLAIM EQUIVALENCE**[Kenneth D. Bassinger \[FNa1\]](#)

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I. INTRODUCTION

The one true constant, in life as in law, is change. Just as the powerful force of nature changes earthly landscapes, countless judicial decisions continually refine the landscape of law. Change, like the wind, blows across the legal landscape, wearing away venerable precedent*686 and depositing in its place the rudiments of untrodden legal theory. At times, the winds of judicial change blow across the shifting sands of precedent with the erosive force of a gale, irretrievably altering the legal landscape. The journey of practitioners over this changing terrain provides insight into the significance of precedential shifts, for it is the behavior of practitioners, as they encounter the hazards along their journey, that offer a telling indicator of the effects of legal change.

In patent law, one case more than any other in recent history is responsible for sculpting a great rift in settled legal precedent. In the span of a mere four years, the Festo case provided the vehicle for a historic change in two familiar doctrines that routinely arise in patent litigation--the doctrine of equivalents and the doctrine of prosecution history estoppel. [FN1] In three decisions, two by en banc panels of the U.S. Court of Appeals for the Federal Circuit and one by the Supreme Court, the settled expectations of patent owners and practitioners alike have been irretrievably altered. These three decisions not only affect the worth of every patent in force today, but also act as a force for behavioral change, influencing the way practitioners procure and enforce patents. [FN2]

In the trilogy of Festo decisions, the Federal Circuit and Supreme Court eroded the doctrine of equivalents and built up the doctrine of prosecution history estoppel. Arguably, the net effect of this shift in precedent is that the same patent secures to a patentee less robust rights today than it did a decade ago. Because of the decline of the doctrine of equivalents caused by the Festo trilogy, patentees are less likely to enforce a patent successfully under the doctrine today than they were only a decade ago. While the erosive force of Festo alone is *687 troubling, equally troubling is the rapid pace at which this shift in precedent occurred. The doctrine of equivalents was developed over nearly 200 years of slow and steady decisions. In the past five years, this precedent has been largely razed.

To explore the impact of the Festo trilogy, this Article briefly reviews the patent system, including the basics of patent infringement. [FN3] It discusses the doctrine of equivalents, a common method of asserting patent infringement, paying particular attention to the underlying theories of its application. [FN4] It then examines prosecution history estoppel, the most prevalent legal theory limiting the doctrine of equivalents. [FN5] It next analyzes the trilogy of decisions, two by the Federal Circuit and one by the Supreme Court, documenting the rapid pace of change in the legal landscape of prosecution history estoppel. [FN6] Finally, this Article explores the effect of the sweeping legal changes brought about by the Festo trilogy, concluding that the behavior of patent practitioners will be irretrievably altered to compensate for this dramatic shift in precedent. [FN7]

II. THE PATENT SYSTEM, INFRINGEMENT, EQUIVALENCE, AND ESTOPPEL

A. The Basics

A U.S. patent, like a parcel of real property, consists essentially of a bundle of rights. [FN8] Founded on constitutional precepts, a patent secures to an inventor exclusive rights in the invention. [FN9] Paramount among these is the right to exclude others from making, using, or selling the patented invention for a fixed period of time. [FN10] As such, a *688 patent grant confers to the patentee a monopoly of limited duration in the invention. [FN11]

A patent, like any property right, has fixed boundaries, [FN12] which are defined by a patent's claims. [FN13] The claims of a patent provide the public with notice of the patentee's asserted intellectual territory. [FN14] In theory, the public may rely on the text of a patent's claims as a measure of the patentee's rights. [FN15] To promote efficient investment in innovation, the bounds of the patent monopoly should be defined with clarity. [FN16] Since an uncertain scope of patent rights may discourage legitimate, noninfringing products and encourage mistaken investment, [FN17] “[a] patent holder should know what he owns, and the public should know what he does not.” [FN18] Ideally, a competitor is able to read the claims of a patent to determine the scope of a patentee's rights. [FN19]

In an effort to provide meaning to the language of a patent's claims, courts often turn to the patent's prosecution history. [FN20] The written record amassed in the lengthy process of obtaining a patent, known as the prosecution history or “file wrapper,” assists in a proper demarcation of the boundaries of a patentee's intellectual territory. [FN21] *689 The prosecution history often reveals the reasoning behind changes made to the patent's text during its frequently arduous trek through the patent examining process. [FN22] An inventor's negotiations with a patent examiner at the U.S. Patent & Trademark Office (PTO) form a part of this public record for every issued U.S. patent. [FN23] Thus, the prosecution history is indispensable in ascertaining the proper scope of a patent's claims and the corresponding scope of the patentee's property rights. [FN24]

In fact, examining the prosecution history is a routine exercise in all patent infringement lawsuits. Infringement simply is a trespass on a patentee's intellectual property rights. [FN25] Generally, an infringement analysis entails two steps: (1) defining the scope of the claims and (2) comparing the device accused of infringement with the properly construed claims. [FN26] Under the first step, a court defines the disputed text *690 of the patent claims. [FN27] The claims, as construed by the court, delineate the boundaries of the patentee's property rights in the invention. After all, it is the text of a patent's claims, a required part of every issued patent, that defines the scope of the patentee's property rights. [FN28]

Under the second step, the accused device is compared with each construed claim. If the various aspects of the accused device are encompassed by any claim, literal infringement results. [FN29] In other words, an accused device literally infringes a patent if every aspect of a patent claim, as construed by the court, is found in the accused device. [FN30] Thus, literal infringement requires that the accused device fall precisely within the literal scope of a patent claim as interpreted by a court. [FN31]

***691 B. The Doctrine of Equivalents**

If the claims and the accused device do not line up precisely, the doctrine of equivalents provides a patentee with a second avenue for asserting infringement. In general, “[t]he scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.” [FN32] As such, the intellectual territory over which a patentee may assert authority includes not only the strictly literal embodiments of that subject matter, but also its equivalents. The doctrine of equivalents thus functions to broaden the patentee's property right beyond the literal interpretation of the claims. This section examines the equitable roots of the doctrine of equivalents. The two primary tests for its application--the function-way-result test and the insubstantial-differences test--are also explained.

The doctrine of equivalents has its roots in equity, shielding the patentee against the pirating of the invention by mere imitation. [FN33] Recognizing that language is often a dull instrument with which to define the intellectual nuances of an invention, [FN34] the courts created the doctrine of equivalents to provide an escape from the confines of the restrictive literalism of claim language. [FN35] Restricting the scope of a patent to a literal interpretation of the claims would obviate the value of the patent grant. [FN36] The doctrine of equivalents “is designed *692 to do equity, and to relieve an inventor from a semantic strait jacket when equity requires.” [FN37] Without the protection provided by the doctrine of equivalents, unscrupulous competitors could avoid infringement merely by making minor changes to the claimed invention. As long as those minor changes took the device beyond a literal reading of the claims, the competitor could avoid infringement liability. [FN38] The doctrine corrects this injustice.

Indeed, the doctrine is intended to strike the proper balance between the public notice function of the patent claims, best served by the certainty of literalism, and the incentive to publicly disclose new technology, best provided by an expansion of the equitable boundaries of those claims. [FN39] While the doctrine is indispensable in providing patentees with a valuable property right, it may also result in an ambiguous delineation of the boundaries of a patent. [FN40] Contrary to the public notice function of the patent system, an expansive application of the doctrine of equivalents broadens the scope of a patent's claims beyond the plain meaning of the claim text and the proper monopoly grant. [FN41] Even worse, this monopoly is vague. While a precisely literal interpretation of the claims provides an exact definition of the intellectual territory of an invention, the boundaries are much less certain when a patentee is allowed to capture equivalents in its patent grant. [FN42] Uncertain boundaries result in unnecessary litigation and discourage competitors from engaging in legitimate noninfringing activities. [FN43]

On the other hand, expanding the equitable boundaries of the claims, an important function of the doctrine of equivalents, promotes the public disclosure of inventions. [FN44] This expansion of the patent monopoly*693 provides inventors with an incentive to disclose their inventions to the public in the text of a patent. [FN45] The greater the patent right offered, the greater the incentive to patent. While it is generally accepted that the doctrine of equivalents is necessary to provide a reasonable property right in a patent, an overly permissive view of claim equivalence erodes the public notice function of the patent system. [FN46] The challenge faced by courts is to strike the proper balance by an intermediate application of the doctrine. Thus, the doctrine, as properly applied, allows a range of equivalents that balances the competing interests of the inventor and the public.

Regardless of where the balance is struck, infringement under the doctrine of equivalents is premised on a showing that the accused device contains each element of a claim or its equivalent. [FN47] Since claims list the various aspects of an invention, infringement exists only when a competitor copies each of those aspects. [FN48] This copying may literally encompass a particular aspect of the invention, or it may equivalently encompass it. Thus, under the doctrine of equivalents, a patentee asserts that every element [FN49] of a claim is met by the competitor's accused device either literally or equivalently. In this manner, certain portions of an accused device may be literal embodiments of a claim *694 element, while other portions may be equivalent to the inventive matter disclosed in a claim element.

One of two tests traditionally applied in a doctrine of equivalents analysis--the function- way- result test--requires a comparison between each element of the asserted claim and the accused device. [FN50] To prove infringement under this test, the equivalent aspect of the accused device must perform substantially the same function in substantially the same way to achieve substantially the same result as that element disclosed in the asserted claim. [FN51]

An analysis of the role played by each element in the context of the specific patent claim will thus inform the inquiry as to whether a substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claimed element. [FN52]

The function- [FN53] way- [FN54] result [FN55] test thus measures the similarity between the asserted claim element and the equivalent aspect of the accused*695 device. If the equivalent and the claim element are sufficiently similar in what they do, how they do it, and what they achieve, then the test satisfactorily demonstrates infringement as to that claim element. [FN56]

Under the second test for equivalence, the insubstantial differences test, a patentee may prove infringement by demonstrating that the differences between the equivalent aspect of the accused device and the asserted claim element are insubstantial. [FN57] To demonstrate insubstantiality, a patentee may show that one of ordinary skill in the art [FN58] at the time of infringement would have known that the accused equivalent was interchangeable with the asserted claim element. [FN59] *696 While known interchangeability of an element of a device with an element of a claim is strong evidence of equivalence, [FN60] such evidence of interchangeability is not dispositive. [FN61] On the other hand, a showing that an element of a device is not interchangeable with an element of the pertinent claim militates against a finding of equivalence. [FN62]

Administering the insubstantial differences test requires an examination of the similarity between the equivalent aspect of the accused device and the asserted claim element. [FN63] As such, evidence of patentable differences between the accused device and the claim element at issue tends to demonstrate that the differences are more than simply insubstantial. [FN64] For example, if the accused device is a nonobvious extension of the claimed invention, then the accused device, provided it is not in the prior art, would be entitled to patent protection and, therefore, would not be within the permissible scope of equivalents. [FN65] In other words, if an accused device exhibits sufficient uniqueness to warrant patent protection, then it differs more than insubstantially from the claimed invention. [FN66]

Regardless of whether the doctrine of equivalents inquiry is couched in terms of the function-

way-result test or the insubstantial differences test, the pertinent inquiry is, “Does the accused product or process contain elements identical or equivalent to each claimed element***697** of the patented invention?” [\[FN67\]](#) In practice, both tests inform the search for equivalence between elements of an accused device and the corresponding elements of a patent claim. [\[FN68\]](#)

Infringement may be found under the doctrine of equivalents when . . . every limitation of the asserted claim, or its equivalent, is found in the accused subject matter, the latter differs from what is literally claimed only insubstantially, and it performs substantially the same function in substantially the same way to achieve substantially the same result. [\[FN69\]](#)

In this manner, the two tests converge into a single probing analysis, [\[FN70\]](#) which is heavily fact dependent. [\[FN71\]](#)

In sum, the doctrine of equivalents provides a patentee with an equitable property right. The intellectual territory over which a patentee may assert its monopoly rights includes equivalents of the claimed subject matter in addition to the strictly literal reading of that claim. The doctrine of equivalents thus functions to broaden the patentee's property right beyond a literal interpretation of the claims. The two primary tests for equivalence-- the function-way-result test and the insubstantial differences test--are often employed in conjunction to ascertain the initial scope of a patent. [\[FN72\]](#) One legal doctrine of particular importance, prosecution history estoppel, provides a significant check on the doctrine of equivalents.

***698** C. Prosecution History Estoppel

Infringement under the doctrine of equivalents is limited by prosecution history estoppel. [\[FN73\]](#) Generally, prosecution history estoppel prohibits a patentee from recovering the scope of a claim surrendered during prosecution to obtain a patent. [\[FN74\]](#) If a patentee limits the scope of a claim, either by a claim amendment or an affirmative statement made during the prosecution of a patent, the patentee may not expand the interpretation of the claim, through the doctrine of equivalents, to recapture the inventive territory that was surrendered. [\[FN75\]](#) Since the public record of the prosecution history provides context and meaning to the issued claims, courts often refer to it to define the boundaries of a patentee's property right more precisely. [\[FN76\]](#) This section briefly explains the most prevalent type of prosecution history estoppel--estoppel based on a claim amendment in the prosecution history. [\[FN77\]](#) The procedural aspects of estoppel are also briefly introduced.

***699** Amendment-based prosecution history estoppel is the most common type applied by courts to limit the inventive scope of a claim. [\[FN78\]](#) Premised on the narrowing effect of adding language to the text of a claim, amendment-based prosecution history estoppel respects the limiting nature of claim language. [\[FN79\]](#) In assessing the restrictive effect of a claim amendment, courts examine the added claim language in conjunction with the asserted equivalent. “To decide whether a claim amendment gives rise to prosecution history estoppel, a court first must determine what claim limitations are alleged to be met by equivalents, whether the limitations at issue were amended during prosecution, and whether a patentee's amendment narrowed the literal scope of the claim.” [\[FN80\]](#) As a result, a patentee is generally held to the narrowing effect of a claim amendment. The doctrine of amendment-based prosecution history estoppel is founded on an often mechanical comparison between the scope of the amended claim and the scope of the original claim. [\[FN81\]](#) Since modifying

the text of the original claim usually results in some narrowing of the intellectual territory encompassed by that claim, an examination of the narrowing amendment*700 itself often forms the basis for an analysis of prosecution history estoppel. [FN82] Under traditional notions of prosecution history estoppel, the patentee surrenders at least some part of that intellectual territory encompassed by the original claim. [FN83]

Prosecution history estoppel thus respects the importance of claim language. After all, it is the claim language that defines the scope of the inventor's monopoly grant in a patent. [FN84] Since every claim element is material, the language of a claim is dissected to delineate the scope of the patent grant. [FN85] Given the importance of claim language, the addition of verbiage to a claim during prosecution is regarded, under prosecution history estoppel, as a noteworthy event in the origin of a patent grant. Likewise, since the precise wording of a claim is critical, even the cancellation of a claim can create estoppel [FN86] depending on the context in which that cancellation occurs. [FN87]

Once a particular claim amendment is deemed to give rise to estoppel, the precise scope of estoppel is the next inquiry. A determination of the scope of disclaimed subject matter resulting from estoppel is enlightened by the record of the proceedings before the PTO [FN88] and *701 the totality of circumstances surrounding those proceedings. [FN89] In addition, the text of the claim amendment itself must be examined to determine the scope of the disclaimed subject matter. [FN90] In determining the disclaimed scope, “the entire record must be analyzed using an objective standard to determine what has been surrendered during prosecution.” [FN91] The scope of the disclaimed subject matter is thus gleaned from the entire prosecution history.

While fact issues may be encountered in interpreting the prosecution history, prosecution history estoppel is a question of law. [FN92] As such, it is the court that determines the scope of the disclaimed subject *702 matter. [FN93] In determining that subject matter, a court traditionally used the reasonable competitor standard, asking “whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter.” [FN94] This is not unlike the classic notion of estoppel in which a person is entitled to rely on the affirmative statements made during an administrative proceeding. [FN95] Finally, it is the patentee who bears the burden of showing that a particular equivalent was not surrendered during prosecution. [FN96] Accordingly, amendments made during prosecution are strictly construed against the patentee. [FN97]

*703 In sum, prosecution history estoppel acts as the primary check on the doctrine of equivalents. Prosecution history estoppel serves to limit the permissible range of equivalents that may be asserted in an infringement action by prohibiting a patentee from recovering the scope of a claim it surrendered during prosecution to obtain the patent. If a patentee, through a claim amendment, limits the scope of a claim, the patentee may not rely on the doctrine of equivalents to recapture the inventive territory that was surrendered. Thus, prosecution history estoppel serves to define the ultimate boundaries of a patentee's property right more precisely by giving force to the prosecution history and the context it provides to the issued claims.

III. THE FESTO TRILOGY

That prosecution history estoppel serves to limit the reach of the doctrine of equivalents has been well-settled law for over a century. [FN98] In fact, a robust and flexible application of the doctrine of

equivalents, while engendering uncertainty in claim scope, has been deemed appropriate for nearly two centuries. [FN99] Before the establishment of the U.S. Court of Appeals for the Federal Circuit in 1982, the regional circuit courts, and on occasion, the Supreme Court crafted patent law and largely left precedent unchanged over time. [FN100] While some disparity*704 among the circuit courts' precedent on the doctrine of equivalents existed, the vitality of the doctrine, and the scope of prosecution history estoppel remained largely constant during most of the twentieth century. [FN101] This stability provided comfort to the patent community, establishing settled expectations for patent practitioners and owners alike.

Nevertheless, the acceleration in the number and importance of patent cases filed in the federal district courts, [FN102] along with the formation of the Federal Circuit, triggered acceleration in the pace of change in patent law. The doctrine of equivalents and prosecution history estoppel are no longer applied in the flexible manner that they once were. [FN103] In the span of a mere four years, the Supreme Court and the Federal Circuit, through a single lawsuit involving a magnetic rodless cylinder for moving objects on a conveyor system, [FN104] overhauled the law of the doctrine of equivalents and prosecution history estoppel. [FN105] In three historic decisions, the landscape of patent law, along with the settled expectations of legions of practitioners and patentees, was irretrievably altered.

This Section recounts the trilogy of opinions--two by en banc panels of the Federal Circuit and one by the Supreme Court. First, in 2000, the Federal Circuit discarded established precedent and introduced the complete bar rule that for claim amendments for which prosecution history estoppel applies, the effect of such estoppel is to bar completely any equivalent for the amended claim element. [FN106] In 2002, the Supreme Court shored up, at least in form, the precedent cast aside by the Federal Circuit, reversing the court's decision and erecting in its place a complex framework of presumptions. [FN107] In 2003, the Federal Circuit, in a second en banc opinion, tried to clarify *705 the Supreme Court's decision, and in doing so, further pockmarked the already treacherous legal terrain of prosecution history estoppel. [FN108]

A. The Federal Circuit's First En Banc Decision: Abandoning a Century of Precedent

In its first en banc opinion, the Federal Circuit articulated a monumental change in patent law by abandoning established precedent [FN109] and crafting a bright-line test for prosecution history estoppel. [FN110] The court explained that the application of prosecution history estoppel is measured by two inquiries. [FN111] The first deals with the type of claim amendments giving rise to estoppel; [FN112] the second, with the scope of estoppel. [FN113] The Federal Circuit announced that estoppel applies to narrowing claim amendments made to comply with any provision of the Patent Act. [FN114] The court also recounted the Warner-Jenkinson presumption that an unexplained claim amendment is presumed to be made to comply with the Patent Act. [FN115] The court, in an attempt to inject a measure of certainty into patent law and the burgeoning industry of patent litigation, expanded the scope of estoppel by establishing the complete bar rule--that for claim amendments for which prosecution history estoppel applies, the effect of such estoppel is to completely bar any equivalent for the amended claim element. [FN116] This Section briefly examines the role of the Federal Circuit's first en banc decision in changing the legal underpinnings of the two fundamental *706 inquiries of prosecution history estoppel--the type of amendments that evoke estoppel and the resulting

scope of that estoppel. [FN117]

In answering the first inquiry, the Federal Circuit held that narrowing claim amendments made to comply with any provision of the Patent Act (for example, made for any reason related to patentability) give rise to prosecution history estoppel. [FN118] The court noted that this category of amendments, those made to comply with any provision of the Patent Act, includes amendments made to satisfy any provision of Title 35 of the United States Code. [FN119] These provisions of the Patent Act, along with the accompanying Title 37 of the Code of Federal Regulations, speak to every aspect of filing and prosecuting a patent application from substantive requirements, such as prior art rejections, [FN120] to merely procedural issues, such as claim clarity. [FN121] Essentially, claim amendments made to comply with the Patent Act fall into two broad categories--those made to overcome a substantive prior art *707 rejection and those that are more procedural in nature. In the first en banc decision, the Federal Circuit held that both of these categories may result in estoppel.

Traditionally, however, not every claim amendment was significant enough to invoke estoppel. [FN122] Generally, a claim amendment not relied upon to secure the patent grant did not give rise to estoppel. [FN123] In particular, before the Federal Circuit's evisceration of the doctrine of equivalents in its first en banc decision, a claim amendment unrelated to a distinction over the prior art did not necessarily implicate prosecution history estoppel. [FN124] Such an amendment generally resulted in estoppel only if it evinced a clear and unmistakable surrender of subject matter. [FN125] As such, in its first en banc opinion, the Federal Circuit extended the type of amendments that invoke estoppel. The Supreme Court traditionally viewed claim amendments made to overcome prior art as important enough to invoke estoppel, *708 leaving the remaining categories of amendments free from the chains of estoppel. [FN126] By announcing that narrowing claim amendments made to comply with any provision of the Patent Act invoke estoppel, the Federal Circuit abandoned Supreme Court precedent and extended the reach of prosecution history estoppel to a previously unfettered class of amendments. [FN127]

In addition, the court explained that the Warner-Jenkinson presumption extends the reach of prosecution history estoppel. [FN128] Under the Warner-Jenkinson presumption, narrowing claim amendments are presumed to be related to patentability unless it is clear they are not. [FN129] In this manner, unexplained claim amendments and those *709 amendments for which a patentee cannot establish a purpose unrelated to patentability, are deemed related to patentability and may give rise to estoppel. [FN130] Thus, it is only those claim amendments that were clearly not made for a reason related to patentability that escape estoppel. [FN131] Of course, the presumption is unnecessary if the claim amendment, as gleaned from the prosecution history, was clearly made for a reason related to patentability. [FN132]

In addition to expanding the reach of estoppel to previously unaffected claim amendments, the Federal Circuit greatly restricted the scope of the doctrine of equivalents by announcing the complete bar rule. [FN133] Under the Federal Circuit's now-overturned complete bar rule, no equivalents were available for a claim element that was narrowed for a reason related to patentability. [FN134] In this manner, once a claim amendment qualifies for the application of prosecution history estoppel, the effect of such estoppel is to completely bar any equivalent for the amended claim element. [FN135] Under this bright-line test, a court was instructed to ascertain the reason that a claim was amended, and, upon determining that a claim amendment was related to patentability, forbid any assertion of

equivalence for the amended ***710** claim element. [FN136] This test, coupled with the Warner-Jenkinson presumption that unexplained claim amendments were subject to the same complete bar of equivalence, relegated the doctrine of equivalents to the trash heap of discarded precedent. [FN137] In its shift from established precedent toward a more certain rule of decision, the Federal Circuit significantly weakened the doctrine of equivalents and tipped the equitable balance in favor of the public's interests by requiring a more literal reading of patent claims. [FN138]

It is this shift that marked a significant departure from the flexible bar approach that had been traditionally applied to determine the limiting effect of a patent's prosecution history on its ultimate scope. [FN139] In the past, the Federal Circuit made clear that even in the face of a narrowing claim amendment, some scope of equivalence may remain. [FN140] Under the flexible bar approach, a district court, consistent with the equitable nature of the doctrine of equivalents, was given wide latitude in applying prosecution history estoppel. [FN141] A claim amendment did not automatically result in a complete surrender of equivalents. [FN142] Instead, a court considered the prosecution history ***711** and surrounding circumstances to determine if the patentee had disclaimed subject matter through a narrowing amendment. [FN143]

The Federal Circuit abandoned its own long line of precedent supporting a flexible bar in favor of the rigid complete bar rule. [FN144] In grasping for certainty with the complete bar rule, the court eliminated the discretion of a district court to apply prosecution history estoppel in a flexible manner. [FN145] Instead, a district court's inquiry was limited to ascertaining the reason for a claim amendment. If the amendment was related to patentability, the court had no discretion to apply estoppel in a flexible manner. Through this monumental shift in precedent, the Federal Circuit undermined the equitable foundation of the doctrine of equivalents, eliminating a district court's discretion to perform the equitable tasks mandated by nearly two centuries of doctrine of equivalents precedent. [FN146] The price of certainty in patent law was thus paid with the equitable discretion wrenched from the district courts. [FN147]

***712** In sum, the Federal Circuit, in its first en banc decision, held that prosecution history estoppel applies to claim amendments made to comply with any provision of the Patent Act, confirmed that unexplained claim amendments are presumed to be made for a reason related to patentability, and decided that no range of equivalents is available for an amended claim limitation when prosecution history estoppel applies. [FN148] While the Federal Circuit's decision injected a measure of certainty into the application of prosecution history estoppel, it emasculated the doctrine of equivalents by stripping equitable discretion from the district courts.

B. The Supreme Court's Decision: Acknowledging Precedent and Complicating Its Application

The Supreme Court revisited the doctrine of equivalents and prosecution history estoppel in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, [FN149] reversing the Federal Circuit's complete bar rule and reaffirming the vitality of the doctrine of equivalents. [FN150] In its opinion, the Court, relying on the basic tenets of the patent system, purported to strike an amicable balance between the competing interests of the patent owner and the public. [FN151] The Court recognized the tension between the public's right to rely on the text of the patent proceedings and the government's interest in encouraging the disclosure of useful inventions through a reasonable patent grant. [FN152] In an

***713** attempt to balance these competing interests, the Supreme Court reversed the Federal Circuit's complete bar rule and established a complex system of presumptions, further complicating the inquiry into prosecution history estoppel. [FN153] In doing so, the Court returned some discretion to the district courts to perform the equitable tasks mandated by the doctrine of equivalents. This Section examines the Supreme Court's analysis. [FN154]

In reversing the complete bar rule, the Supreme Court established a purportedly more flexible restraint on the doctrine of equivalents. [FN155] Underpinning its decision, the Court recognized the important role assumed by the doctrine of equivalents in promoting the disclosure of inventions [FN156] and identified the competing interest of the public in being able to rely on a patent and its prosecution history. [FN157] A patent, like any property right, has fixed boundaries. [FN158] An application of the doctrine of equivalents, however, creates uncertainty about where those boundaries lie. [FN159] To promote efficient investment in innovation, the bounds of the patent monopoly should be defined with clarity. [FN160] Since an uncertain scope of patent rights may discourage legitimate, noninfringing products and encourage mistaken investment, [FN161] “[a] patent holder should know what he owns, and the public should know what he does not.” [FN162]

The Supreme Court explained that the uncertainty resulting from an application of the doctrine of equivalents is a necessary price for ***714** ensuring the appropriate incentives for innovation. [FN163] The rights conferred by a patent grant are the sole motivation for inventors to disclose their inventions to the public in the text of a patent. [FN164] If the scope of a patent is limited to a literal interpretation of its claims, its value is greatly diminished. [FN165] Accordingly, the rule of literalism has been consistently disregarded in favor of the doctrine of equivalents. [FN166] Some range of equivalents is deemed necessary by the Court to adequately protect an inventor's property rights in a patent grant. [FN167] Since “[t]he language of the patent claim may not capture every nuance of the invention or describe with complete precision the range of its novelty,” [FN168] the doctrine of equivalents remains an important tool in providing a patentee with more than just the hollow grant of literal claim interpretation. [FN169]

While recognizing the necessity for the doctrine of equivalents, the Supreme Court also acknowledged the vitality of prosecution history estoppel as a check on the doctrine. [FN170] When an inventor narrows a claim to obtain a patent, “he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent.” [FN171] Were it otherwise, “the inventor might avoid the PTO's gatekeeping role and seek to recapture in an infringement action the very subject matter surrendered as a condition of receiving the patent.” [FN172] Since the doctrine of equivalents is premised “on language's inability to capture the essence of innovation,” it should not be available to a patentee who, by amending a claim, implicitly recognized the difference between the claim language as originally written and as later amended. [FN173]

After reaffirming the necessity for prosecution history estoppel, the Court examined the instances in which it should be invoked. Consistent ***715** with the Federal Circuit's first en banc decision, the Supreme Court held that when an inventor narrows the scope of a claim by amendment, prosecution history estoppel may preclude a finding of equivalence when the claim amendment was made to satisfy any requirement of the Patent Act. [FN174] Since the requirements of the Patent Act must be satisfied for a patent to issue, claim amendments made to secure issuance of the patent are material and

may invoke estoppel. [FN175] In such a case, the patentee has “conceded an inability to claim the broader subject matter or at least . . . abandoned his right to appeal a rejection. In either case, estoppel may apply.” [FN176] In so holding, the Supreme Court affirmed the importance of examining the underlying reason for a given claim amendment.

While allowing the application of prosecution history estoppel to preclude equivalents to claim amendments made to secure a patent, the Supreme Court refused to extend the reach of estoppel to completely bar all equivalents to the amended claim. [FN177] Since the purpose of estoppel is “to hold the inventor to the representations made during the application process and to the inferences that may reasonably be drawn from the amendment,” [FN178] its reach “requires an examination of the subject matter surrendered by the narrowing amendment.” [FN179] The inventor, by amending the claim, has not necessarily surrendered all equivalents. [FN180] Instead, “[t]he narrowing amendment may demonstrate what the claim is not; but it still may fail to capture precisely what the claim is.” [FN181]

The Supreme Court abrogated the Federal Circuit's complete bar rule in favor of a presumption that no range of equivalents is available for a narrowing claim amendment, thus returning some discretion to the district courts. Therefore, courts “should presume that the patentee surrendered all subject matter between the broader and narrower claim language.” [FN182] The burden rests on the patentee asserting a particular*716 equivalent to demonstrate both that the claim amendment was not made for reasons related to patentability and that the asserted equivalent was not surrendered. [FN183] In support of this burden, the Court noted that “[t]he patentee, as the author of the claim language, may be expected to draft claims encompassing readily known equivalents.” [FN184]

A patentee, to rebut the presumption and effectively assert an equivalent, must search for a reason that the equivalent was not described in the patent claims as issued. [FN185] To overcome the presumption that estoppel bars a range of equivalents, “[t]he patentee must show that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.” [FN186] The Court provided a truncated and incomplete list of ways in which a patentee may overcome the heavy burden imposed by this requirement:

The equivalent may have been unforeseeable at the time of the [patent] application; the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question; or there may be some other reason suggesting that the patentee could not have reasonably been expected to have described the insubstantial substitute in question. [FN187]

The Supreme Court's only essential modification to the Federal Circuit's first en banc decision was abandonment of the complete bar rule. Instead of resulting in a complete bar of all equivalents, a claim amendment, either unexplained or made to secure the patent, is presumed to bar all equivalents. [FN188] In establishing this presumption, the Supreme Court acknowledged the soundness of two centuries of precedent and returned discretion to perform the equitable tasks mandated by the doctrine of equivalents to the district courts. [FN189] This *717 presumption of a complete bar marks the significant difference between the Federal Circuit law of *Festo* and the Supreme Court law of *Festo*.

In sum, the Supreme Court upheld the Federal Circuit's holding that a narrowing claim amendment made to satisfy any requirement of the Patent Act may give rise to estoppel. [FN190] The Court

reversed the Federal Circuit's complete bar rule and created a complex layer of presumptions in its place. [FN191] The Court established a presumption that a narrowing amendment made for a reason related to patentability surrenders the entire territory between the original claim limitation and the amended claim limitation, and explained that a patentee may overcome that presumption by showing that “at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.” [FN192] Specifically, the Court enumerated three ways in which the patentee may overcome the presumption--by demonstrating that “the equivalent [would] have been unforeseeable at the time of the [amendment],” that “the rationale underlying the amendment [bore] no more than a tangential relation to the equivalent in question,” or that “there [was] some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.” [FN193]

C. The Federal Circuit's Second En Banc Decision: Adding Complexity to an Already Complicated Doctrine

The Federal Circuit revisited the doctrine of prosecution history estoppel in its second and most recent en banc decision. [FN194] In a failed attempt to provide guidance on the layered presumptions handed down by the Supreme Court, the Federal Circuit pieced together the current state of the law of prosecution history estoppel and clarified a few remaining questions. [FN195] This Part examines the Federal Circuit's most recent chapter of the Festo saga.

***718** At the outset, the Federal Circuit surveyed the landscape of presumptions related to the prosecution history estoppel inquiry to cobble together an analytical framework for a court's analysis. Because the Festo line of decisions is limited to amendment-based prosecution history estoppel, the appropriate starting point is the claim amendment itself. First, the claim amendment is examined to determine if it is narrowing or indicates that inventive territory was relinquished. [FN196] If it is not narrowing, then there is no estoppel. [FN197] If it is narrowing, “then the second question is whether the reason for that amendment was a substantial one relating to patentability.” [FN198] A court examines the prosecution history itself to determine the reason for the narrowing amendment. [FN199] If the prosecution history does not reveal the reason for the amendment, then it is presumed to be related to patentability under Warner-Jenkinson. [FN200] In this manner, claim amendments that are expressly related to patentability are treated like unexplained claim amendments. Only those claim amendments that were not made for a reason related to patentability and those clearly non-narrowing amendments, as ascertained from the prosecution history, do not give rise to estoppel. [FN201]

If the amendment was made for a reason related to patentability, then prosecution history estoppel applies and the inquiry turns to the scope of estoppel. [FN202] The presumptions of the Supreme Court's Festo decision are evoked to determine that scope. A patentee is presumed ***719** to have “surrendered all territory between the original claim limitation and the amended claim limitation.” [FN203] The patentee then bears the burden of rebutting the presumption of complete surrender by demonstrating that the equivalent in question was not relinquished during prosecution. [FN204] If the patentee fails to rebut the presumption, then estoppel bars the patentee from relying on the doctrine of equivalents. [FN205] If the patentee rebuts the presumption, then the question of infringement under the doctrine of equivalents is decided on the merits. [FN206]

The Federal Circuit elaborated on the three ways in which a patentee may rebut the Supreme Court's presumption of a complete bar. [FN207] The first criterion “that the equivalent was unforeseeable at the time of the amendment” presents an objective inquiry, asking “whether the alleged equivalent would have been unforeseeable to one of ordinary skill in the art at the time of the amendment.” [FN208] As guidance, the Federal Circuit held that after-arising technology is usually unforeseeable and, therefore, is not properly excluded as a viable equivalent by prosecution history estoppel. [FN209] The court seemed to suggest that an equivalent, to be foreseeable, must have existed in the technology at the time of the amendment. [FN210] Aside from this basic statement about an alleged equivalent's temporal classification as old technology or after-arising technology, the court noted that the foreseeability question is highly factual in nature, requiring expert testimony about the state of the art at the time of the amendment and the *720 level of one of ordinary skill in the art at that time. [FN211] The court provided no further guidance for applying the foreseeability criterion.

The second criterion, couched in terms of tangentialness by the Supreme Court, “asks whether the reason for the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.” [FN212] Once again, the Federal Circuit provided little guidance, simply stating that an equivalent found in the prior art is not tangential. [FN213] Of course, this has always been the case. It is axiomatic that a patentee can have no claim to intellectual property in the public domain of the prior art, nor does such territory even qualify as inventive. [FN214] Accordingly, the Federal Circuit's guidance is really no guidance at all. Moreover, the court limited the inquiry into tangentialness to the prosecution history itself. [FN215] A patentee, to overcome the presumption of complete surrender based on the tangentialness prong, may only rely on the record of the prosecution history itself. [FN216] Unfortunately, if the reason for an amendment is truly tangential in nature, it is not likely to be found in the prosecution history. [FN217]

*721 The third criterion, a catch-all category provided by the Supreme Court, requires the patentee to establish some other reason that the equivalent could not have been described. [FN218] The court held that this criterion is a necessarily vague and narrow category, providing almost no guidance as to its proper application. [FN219] Perhaps, “the shortcomings of language” may be classified as a reason that the equivalent could not have been described. [FN220] Whatever the reason, it should be ascertained from the prosecution history itself. [FN221] On the presumptions, the court said little more.

Despite its quest for certainty, the Federal Circuit, in its opinion, did not provide the guidance craved by legions of patent practitioners. Instead of generously describing the proper application of the Supreme Court's rebuttal criteria, the court parsimoniously withheld much-needed guidance. This lack of guidance itself creates uncertainty. [FN222] In simply parroting the Supreme Court's language, the Federal Circuit left the development of prosecution history estoppel in the hands of its own later panels and in those of the district courts. It is ironic indeed that the Federal Circuit, after advocating certainty in its first en banc decision, retreated in its second en banc decision, timidly providing little substantive direction. [FN223]

IV. THE UNSETTLING EFFECT OF THE RAPID PACE OF LEGAL CHANGE

The limiting effects of the Festo trilogy, along with the rapid pace at which the law has changed,

have upset the settled expectations of *722 patentees and practitioners alike. The Federal Circuit's first en banc decision marked a significant departure from nearly two centuries of established precedent. [FN224] In one fell swoop, the court robbed the doctrine of equivalents of its virility by creating the complete bar rule. Recognizing that the Federal Circuit had disregarded its precedent, the Supreme Court reversed the Federal Circuit and instead proffered a convoluted collection of presumptions that set the stage for the Federal Circuit's second en banc opinion. It is in this second en banc decision that the Federal Circuit, though providing little guidance, recognized that the Supreme Court's decision left the complete bar rule largely intact. The layered presumptions, under the Federal Circuit's ambiguous second en banc opinion, are exceedingly difficult to overcome, rendering the Supreme Court's presumption of a complete bar the functional equivalent of a complete bar.

The Federal Circuit, in its two en banc decisions, promulgated a significant change in the effect of prosecution history estoppel and stunned the community of patent practitioners. Under the now defunct flexible bar rule, claim amendments did not necessarily limit a patent's scope. [FN225] Under the complete bar rule, they almost certainly did. [FN226] Understandably, this change in law resulted in a change in the behavior of patent practitioners. In fact, the legal terrain of prosecution history estoppel was made so much more formidable that the behavior of patent practitioners is likely to be influenced for years to come. [FN227]

This Part explores the manner in which the Festo trilogy has changed the patent community's expectations. Since all patents endure prosecution and most are subject to claim amendments, the reach of the shift in patent law is significant. The Festo saga provides patent practitioners with incentives to change the way in which they draft and amend patent claims. The rebuttal criteria also affect practitioners' behavior in prosecuting patent applications. Moreover, the retroactive application of Festo on a million issued patents that were *723 prosecuted under the flexible bar regime reveals the extent of this epic shift in precedent. In addition, the impact of the Festo trilogy is amplified by otherwise innocuous events, such as the identity of the patent examiner during prosecution. Finally, Festo alters the expectations of a class of inventors by further excluding those that are at a disadvantage in securing patent rights for their inventions.

The sweeping change in the application of prosecution history estoppel impacts the behavior of patent practitioners in prosecuting patent applications. [FN228] Every issued patent must endure the patent examination process--a process that can take years and result in a hefty record of amendments and arguments. [FN229] The prosecution history, composed of these amendments and arguments, reveal the reasoning behind changes made to the patent's claims during its arduous trek through the patent examining process. [FN230] An inventor's negotiations with a patent examiner at the PTO form a part of this public record for every issued U.S. patent. [FN231] In most instances, the claims filed with a patent application are amended during this process. [FN232] Prior to the Festo trilogy, claim amendments, a routine part of the process, were not as fatal as they have become under current law. [FN233]

The harsh consequences of the Festo trilogy promise to alter the manner in which the patent practitioner drafts and amends claims during prosecution. [FN234] Since the Festo presumptions apply to narrowing *724 claim amendments related to patentability, they provide practitioners with incentives to change their claiming behavior. One logical, though impractical, course of action is to avoid amending claims altogether or to attempt to draft non-narrowing amendments. [FN235] Unfortu-

nately, this is difficult to do in practice. Frequently, an examiner rejects a claim based on a substantive ground requiring a substantive and narrowing amendment. The practitioner's response is dictated by the examiner's rejection. [FN236] In fact, since the give and take of patent prosecution necessitates claim amendments in almost every patent application, it is rare to find a patent whose claims issued as they were filed. [FN237] Thus, to avoid amendments altogether or to draft non-narrowing amendments is an impossible task in the face of an examiner's substantive rejection. [FN238]

Of course, one way to keep claim amendments to a minimum is to draft more specific claims in the original patent application. [FN239] Since more specific claims encompass less inventive territory, they are less likely to be the subject of a substantive rejection issued by a patent examiner. [FN240] The price of specificity in claim language, however, *725 can be high, since specific claim language captures less inventive territory. [FN241] Claims drafted too narrowly do not fully secure the fruits of the inventor's labors. The Festo presumptions thus present a dilemma for the patent drafter. To avoid prosecution history estoppel and its accompanying loss of claim scope, narrow claims could be drafted. [FN242] However, drafting narrow claims results in a loss of claim scope and a lessening of the inventive territory of the patent grant.

Moreover, the dull instrument of the English language is frequently insufficient to capture precisely the true essence of invention in a narrow claim. Claims are crafted in a patent application with a level of linguistic precision that may not be adequate to avoid rejection by the patent examiner. [FN243] The shortcomings of claim language are often overcome during the lengthy prosecution process. A practitioner refines claim language during prosecution not only to overcome an examiner's substantive rejections, but also to capture the invention more particularly in the text of a claim.

Instead of constraining the scope of claims filed in a patent application, a practitioner could posit the next question in the complex list *726 of Festo inquiries: Is the claim amendment related to patentability? [FN244] The Festo trilogy provides practitioners with an incentive to amend claims for a reason unrelated to patentability. [FN245] Unfortunately, the examiner, not the patent practitioner, dictates the reason for a claim amendment. Claim amendments are made in response to examiner rejections. The reason for a responsive amendment is found not in the amendment itself, but in the rejection set forth by the examiner. [FN246] A practitioner, while fully capable of crafting any number of claim amendments, cannot alter the reason for the amendment.

During prosecution, patentees will almost certainly face a narrowing claim amendment made, or presumed to be made, for a reason related to patentability. As a result, during enforcement, they will also be confronted with the presumption of a complete bar. [FN247] Naturally, a patentee, in order to secure the broadest possible patent grant, does not wish to foreclose the doctrine of equivalents as an avenue for infringement liability. At this point, to rely on the doctrine of equivalents, the patentee bears the burden of rebutting the presumption of complete surrender by demonstrating that the equivalent in question was not relinquished during prosecution. [FN248] The three rebuttal criteria each provide separate incentives for practitioners during the patent procurement process. [FN249]

The first rebuttal criterion--that the equivalent was unforeseeable at the time of the amendment--provides the largest impetus for behavioral change during patent procurement. [FN250] The texture of an *727 unforeseeable equivalent, through the Supreme Court, has been woven into the fabric of prosecution history estoppel. This enigma of the unforeseeable equivalent now assumes a central role

in an estoppel analysis. [FN251] While an unforeseeable equivalent may be couched in simple terms, the depth of its meaning can only be ascertained by an intensely factual inquiry undertaken during the complexities of patent litigation. [FN252] Simply, an unforeseeable equivalent is one that was not known or should not have been known by one of ordinary skill in the art at the time the claim was amended. [FN253] This definition, however, belies the true nature of an unforeseeable equivalent. An unforeseeable equivalent is replete with factual undertones. [FN254] It is something that can only be determined with the assistance of expert testimony. [FN255] Moreover, the landscape of the state of the prior art, often a decade ago, must be reconstructed in the courtroom. [FN256] The purported equivalent may then be viewed against this backdrop to determine whether it is unforeseeable. [FN257]

During procurement, a patent drafter views this presumption from a different perspective--that of foreseeability. Because foreseeable equivalents are precluded from being captured during litigation under the Festo presumptions, a practitioner is required to express in claim language those foreseeable equivalents an inventor wishes to maintain as a part of the intellectual territory of the patent grant. This requirement places an onerous and unrealistic burden on inventors. [FN258] Inventors often lack the foresight to include every foreseeable equivalent that may later be the subject of litigation in the claim language. In addition, the practical realities of the process of patent prosecution further limit the prospects that any such foresight will be *728 incorporated into the patent claims. In most cases, an attorney drafts the claims on behalf of the inventor and then prosecutes the patent application before the PTO. The subtleties of the invention are often lost in the exchange between inventor and attorney. It is inherently impracticable to impose the task of precisely claiming all foreseeable equivalents on an inventor. [FN259] Nonetheless, a patent drafter, under the Festo presumptions, is forced to include in the text of the patent as many of the important foreseeable equivalents as possible. [FN260]

This first criterion--that the equivalent was unforeseeable at the time of the amendment--also represents the greatest departure from established precedent. Under established precedent, a patentee may successfully assert an equivalent by demonstrating that the equivalent is an insubstantial variation of the claim element. [FN261] Such an insubstantial variation is often one that is foreseeable at the time the patent application was written. [FN262] Further, under the accepted tenets of the *729 insubstantial differences test for equivalence, a patentee may show that an equivalent was an obvious variation of the claim element. [FN263] In either case, the patentee's burden under the doctrine of equivalents is one that is often met by showing that the asserted equivalent is foreseeable. By forcing a patentee to show the opposite, the Supreme Court and Federal Circuit greatly diminish the range of permissible equivalents.

This change in precedent places an especially harsh burden on the patentee whose patent was obtained under pre-Festo law. [FN264] Under pre-Festo law, the flexible bar rule permitted a greater assertion of infringement under the doctrine of equivalents. [FN265] The patent drafter, relying on the flexible bar, was not obligated to include in the text of a patent application all foreseeable equivalents. Instead, those foreseeable equivalents were a feasible avenue for an infringement assertion under the doctrine of equivalents. [FN266] Today, under the Festo presumptions, they are not. [FN267]

This shift in precedent also magnifies the temporal disjunction between patent prosecution and patent enforcement. First, a patent application is filed, and after several years of prosecution, the pat-

ent grant issues. Often a patent is embroiled in patent litigation (the enforcement process) years after it issued, and perhaps a decade after the patent application itself was filed. This disjunction in time means ***730** that a patent prosecuted under the more lenient pre-Festo law is enforced under the more draconian presumptions of the Festo trilogy. [FN268]

The remaining two rebuttal criteria require a patentee to show that the amendment was tangential [FN269] or that some other reason existed that the equivalent could not have been described. [FN270] The limited reach of these two criteria provides little impetus for behavioral change. Like many of the other presumptions, these two criteria are determined by factors that are beyond the control of the practitioner. [FN271] Tangentialness, by its very nature, places beyond the reach of estoppel those claim amendments that are merely insignificant. [FN272] Claim amendments are often deemed insignificant for reasons beyond the influence of the practitioner. [FN273] The catch-all category also presents an after-the-fact inquiry over which the practitioner has little control during prosecution. This category encompasses uncontrollable events, such as the inability of language to describe in the text of a claim a foreseeable equivalent. [FN274] Such events provide little incentive for behavioral change.

***731** While the Festo presumptions themselves create uncertainty, the unpredictability of the patent examination process also interjects further chaos into the world of prosecution history estoppel. A patent application begins its substantive journey through the PTO by being assigned to a patent examiner. One of the chief determinants of how easily a patent application proceeds to issuance as a patent is the disposition of the patent examiner. Patent examiners differ. [FN275] Some are more stringent than others. Some require more claim amendments than others. [FN276] The random nature of a single choice from the examiner pool thus impresses a further uncertainty on the patent prosecution process. Unfortunately, this uncertainty is amplified in patent litigation by the ultimate effect of prosecution history estoppel. That one examiner would require a claim amendment when another examiner would not, based solely on personal differences between the two, is a regrettable basis on which to premise estoppel. The inequitable nature of the harsh Festo presumptions reveals its face in such a situation. [FN277] Accordingly, under the new law of prosecution history estoppel, the luck of the examiner draw assumes a more prominent role in determining the ultimate worth of an issued patent.

But the implications of the Festo trilogy extend beyond simply creating uncertainty that drives the behavioral change of practitioners. The shift in precedent brought about by Festo, a shift that witnessed the demise of the doctrine of equivalents, fundamentally alters the rights granted by a patent. This precedential shift effectively diminishes the scope of a patentee's exclusionary rights by impeding one avenue for asserting infringement--the doctrine of equivalents. [FN278] In addition, the layered presumptions of Festo increase the expense of ***732** procuring and enforcing patents by complicating patent law. [FN279] Taken together, these consequences of Festo work hardship on patentees.

While all patentees are disadvantaged by the diminished set of patent rights, those with fewer financial resources, the individual inventor and small company, are particularly harmed. Drafting a high quality patent application that addresses all of the incentives embodied in the current state of prosecution history estoppel takes skilled expertise and ample time. Such expert legal services are expensive. [FN280] Small entities [FN281] often lack the sophistication and financial resources to procure high quality patents that effectively deal with the complex legal doctrine of Festo. As a result, those

without the financial resources to expend on sophisticated legal services, at least in part due to Festo, are at a disadvantage in obtaining a high quality patent.

In addition to burdening small entities by increasing the expense of procuring quality patents, Festo also harms them during the prohibitively expensive patent enforcement process. The layered presumptions of Festo place hurdles that are often difficult to surmount in the path of a patentee who wishes to successfully navigate the Festo presumptions during litigation. [FN282] The expertise required to successfully enforce a patent, even at a rudimentary level, is beyond the reach of the typical small entity. [FN283] More importantly, the diminished set of *733 rights secured by a patent in the post-Festo era leave patentees with a less robust set of rights to enforce. [FN284]

Thus, the overarching social implications of Festo promise to work a further exclusion of those already at a disadvantage in securing patent rights for their inventions. Not only does Festo add expense to the patent procurement process, it also further complicates the prohibitively expensive enforcement process. Festo, by marking a shift in the protection afforded by the doctrine of equivalents, erodes a measure of the rights granted by a patent. While once relied on to extend the boundaries of the patent grant, the doctrine of equivalents is now largely impotent, leaving the individual inventor or small company, who traditionally receives an inartfully drafted patent, at the mercy of literal claim interpretation.

Finally, the brisk pace of change itself engenders uncertainty. While change is inevitable, sweeping and speedy change shakes the very foundation upon which reasoned behavior is built. [FN285] A change in legal precedent that occurs as rapidly as has been the case in the Festo trilogy alters the behavior, often in unpredictable ways, of the patent practitioner. [FN286] The rapid pace of change itself undermines the certainty that the Federal Circuit attempted to attain with the more *734 rigorous application of prosecution history estoppel. [FN287] In announcing the complete bar rule of the first en banc Festo decision, the Federal Circuit tried to impose a healthy dose of certainty, with a bright-line test, to supplant the ambiguity created by the application of the doctrine of equivalents. [FN288] That bright-line test has been replaced by a complex set of presumptions, just as the desired certainty has been replaced by an uncertain set of factual questions. Not only does the content of the layered presumptions cause uncertainty, but so too does the context of the changes embodied by the rapid erosion of established precedent.

CONCLUSION

In the span of a mere four years, Festo provided the vehicle for a historic change in the landscape of two familiar doctrines that routinely arise in patent litigation --the doctrine of equivalents and the doctrine of prosecution history estoppel. In three decisions, the settled expectations of patent owners and practitioners alike were irretrievably altered. What was once routine practice now negatively affects the scope of patent protection. The complex set of layered presumptions imposed by the Festo trilogy have upset the balance struck, over nearly two centuries of methodical opinions, between the legitimate expectations of the patentee to enjoy a reasonable property right and those of the public to be certain of what intellectual territory a patent encompasses. These presumptions heaped upon presumptions, along with associated rebuttal criteria, not only complicate the legal landscape for practitioners, but also upset the expectations of patent owners. While the erosive force of Festo alone is

troubling, what is equally troubling is the rapid pace at which this shift in precedent occurred. The doctrine of equivalents was developed over nearly two-hundred years of slow and steady decisions. In the past five years, this precedent has been largely dismantled.

Change, of course, is inevitable. The rapid pace of legal change effected by the Festo trilogy sculpted anew the legal landscape of ***735** claim equivalence. After Festo, the legal terrain of the doctrine of equivalents and prosecution history estoppel has become much more treacherous for patent owners and practitioners alike. The journey of practitioners as they encounter the pitfalls in this altered legal landscape reveals the significance of these changes. In the realm of patent law, the changes embodied in the Festo trilogy promise to impact the behavior of patent practitioners for years to come.

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[FN1]. See *infra* Part III (discussing trilogy of Festo decisions).

[FN2]. Judge Michel articulated the impact of the first en banc decision,

The effect of today's ruling upon previously-issued but unexpired patents may be dramatic. While I cannot predict all the consequences that may flow from today's decision, I think it is safe to say that the majority's rule will reduce the effective scope, and thus, the value, of most of the 1,200,000 patents that are unexpired and enforceable. Wholly apart from other long-term effects of the majority's rule, I feel that today's ruling will be unfairly disruptive of existing commercial relations. Today's ruling offers no "grandfathering" provision for the vast numbers of unexpired patents that contain amended claim limitations, and thus that will become increasingly susceptible to copying under today's new rule. Patent applicants who prosecuted their claims under the rule of a flexible bar will have protection limited now by our new rule of complete estoppel. As today's adoption of the complete bar was utterly unpredictable, these applicants had no way to avoid the harm that now befalls them.

Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 618-19 (Fed. Cir. 2000), rev'd en banc, 535 U.S. 722 (2002) (Festo II) (Michel, J., dissenting in part).

[FN3]. See *infra* Part II(A) (discussing the basics of the patent system).

[FN4]. See *infra* Part II(B) (discussing the doctrine of equivalents).

[FN5]. See *infra* Part II(C) (discussing prosecution history estoppel).

[FN6]. See *infra* Part III (discussing trilogy of Festo decisions).

[FN7]. See *infra* Part IV (discussing the impact of the trilogy of Festo decisions).

[FN8]. See Scott G. Ulbrich, *Festo, Notice and the Application of Prosecution History Estoppel to Means Plus Function Claims*, 28 Wm. Mitchell L. Rev. 1165 (2002) (likening a patent to real prop-

erty). A patent may also be thought of as a contract between the patentee, who is granted a limited duration monopoly in his invention, and the government, who disseminates to the public the patentee's useful knowledge to further fuel the technological engine that powers economic development. See William T. Kryger, [The Doctrine of Equivalents into the Year 2000: The Line Is Becoming Brighter for Some but Remains Dim for Others](#), 3 Marq. Intell. Prop. L. Rev. 203, 216-17 (1999) (discussing the patent law contract analogy).

[FN9]. See U.S. Const. art. I, § 8, cl. 8, which provides, “The Congress shall have Power... To Promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”

[FN10]. See 35 U.S.C. § 271(a) (2002) (listing the exclusive rights conferred by a patent grant).

[FN11]. For recently filed patent applications, a patent grant expires twenty years after the date the application is filed. 35 U.S.C. §154(a)(2) (2002).

[FN12]. [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 730 (2002) (Festo II).

[FN13]. See [Process Control Corp. v. HydReclaim Corp.](#), 190 F.3d 1350, 1355 (Fed. Cir. 1999) (discussing claim language's effect on the scope of invention); [SRI Int'l v. Matsushita Elec. Corp.](#), 775 F.2d 1107, 1121 (Fed. Cir. 1985) (holding claim language defines the scope of the invention); [Zoltek Corp. v. United States](#), 48 Fed. Cl. 290, 297 (2000) (discussing claim construction and scope of invention).

[FN14]. See [Pall Corp. v. PTI Techs. Inc.](#), 259 F.3d 1383, 1390 (Fed. Cir. 2001) (describing public notice function of patents); [Pioneer Magnetics Inc. v. Micro Linear Corp.](#), 238 F.3d 1341, 1345 (Fed. Cir. 2001) (discussing public notice function of patent claims); [Regents of the Univ. of Cal. v. Oncor Inc.](#), No. C-95-3084-VRW (N.D. Cal. 1997) (holding that notice function of claims is best served by adhering to narrow claim interpretation).

[FN15]. [Festo II](#), 535 U.S. at 731 (2002); see also [Conopco, Inc. v. May Dep't. Stores Co.](#), 46 F.3d 1556, 1562 (Fed. Cir. 1994) (holding that the public is entitled to rely on the claim text in avoiding infringement).

[FN16]. [Festo II](#), 535 U.S. at 731.

[FN17]. [Id.](#) at 731-32.

[FN18]. [Id.](#) at 731.

[FN19]. See [Athletic Alternatives, Inc. v. Prince Mfg., Inc.](#), 73 F.3d 1573, 1582 (Fed. Cir. 1996); see also [Conopco](#), 46 F.3d at 1562 (Fed. Cir. 1994) (holding that the public is entitled to rely on the claim text in avoiding infringement).

[FN20]. See [DeMarini Sports, Inc. v. Worth, Inc.](#), 239 F.3d 1314, 1323 (Fed. Cir. 2001) (“The prosecution history is considered to determine whether or not there were any express representations made in obtaining the patent regarding the scope and meaning of the claims.”); [Vitronics Corp. v. Conceptronic, Inc.](#), 90 F.3d 1576, 1582 (Fed. Cir. 1996) (stating that when construing patent claims

“the court may also consider the prosecution history of the patent, if in evidence”).

[FN21]. See [Rheox, Inc. v. Entact, Inc.](#), 276 F.3d 1319, 1326, 61 USPQ2d 1368, 1373 (Fed. Cir. 2002) (holding that court should “assess whether a patentee relinquished a particular claim construction based on the totality of the prosecution history, which includes amendments to claims and arguments made to overcome or distinguish references.”); [Desper Prods., Inc. v. QSound Labs, Inc.](#), 157 F.3d 1325, 1337 (Fed. Cir. 1998) (“Prosecution history is an important source of intrinsic evidence in interpreting claims because it is a contemporaneous exchange between the applicant and the examiner.”).

[FN22]. The courts have explained:

[A patent's prosecution history includes] all express representations made by or on behalf of the applicant to the examiner to induce a patent grant. Such representations include amendments to the claims and arguments made to convince the examiner that the claimed invention meets the statutory requirements of novelty, utility, and non-obviousness. Thus, the prosecution history (or file wrapper) limits the interpretations of claims so as to exclude any interpretation of claims that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.

[Standard Oil Co. v. Am. Cyanamid Co.](#), 774 F.2d 448, 452 (Fed. Cir. 1985); see also [Jonsson v. Stanley Works](#), 903 F.2d 812, 817 (Fed. Cir. 1990) (“The entire record of proceedings in the Patent and Trademark Office, including representations made to the Examiner that the invention is patentable, are included in the patent's prosecution history.”).

[FN23]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 172 F.3d 1361, 1371-72 (Fed. Cir. 1999), vacated en banc, 187 F.3d 1381 (Fed. Cir. 1999), vacated and remanded, 535 U.S. 722 (2002) (“Patent prosecution is a public record, and after grant of the patent the public has full access to the examiner's objections and the patentee's responses along the path to the grant.”); [Jonsson](#), 903 F.2d at 817 (“The entire record of proceedings in the Patent and Trademark Office, including representations made to the Examiner that the invention is patentable, are included in the patent's prosecution history”); [Standard Oil Co.](#), 774 F.2d at 452 (affirming that prosecution history includes “all express representations made by or on behalf of the applicant to the examiner to induce a patent grant. Such representations include amendments to the claims and arguments made to convince the examiner that the claimed invention meets the statutory requirements of novelty, utility, and non-obviousness.”).

[FN24]. See [Desper Prods., Inc.](#), 157 F.3d at 1337 (Fed. Cir. 1998) (holding that prosecution history is indispensable in claim interpretation).

[FN25]. See 35 U.S.C. § 271(a) (2002) (noting five acts that may constitute infringement--make, use, sell, offer to sell, or import the claimed invention).

[FN26]. See [K-2 Corp. v. Salomon S.A.](#), 191 F.3d 1356, 1362 (Fed. Cir. 1999) (“An infringement analysis is a two-step process in which the court first determines, as a matter of law, the correct claim scope, and then compares the properly construed claim to the accused device to determine, as a matter of fact, whether all of the claim limitations are present in the accused device, either literally or by a substantial equivalent.”); [Tanabe Seiyaku Co. v. U.S. Int'l Trade Comm'n](#), 109 F.3d 726, 731 (Fed. Cir. 1997) (“[D]etermination of whether an accused product or process infringes a claim in a patent is

universally understood to involve two steps. First, we construe the claim asserted to be infringed to determine its meaning and scope. Second, we compare the properly construed claim to the accused product or process.”); [Mannesmann Demag Corp. v. Eng'd Metal Prods. Co.](#), 793 F.2d 1279, 1282 (Fed. Cir. 1986) (“Analysis of patent infringement involves two inquiries: determination of the scope of the claims, if there is a dispute as to claim construction or interpretation; followed by determination of whether properly interpreted claims encompass the accused structure.”).

[FN27]. See [Vulcan Eng'g. Co. v. Fata Aluminum, Inc.](#), 278 F.3d 1366, 1373 (Fed. Cir. 2002) (“[I]f there is a dispute as to the scope or meaning of a claim or any aspect thereof, the court will resolve the issue as a matter of law.”).

[FN28]. See [Markman v. Westview Instr., Inc.](#), 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384 (1996) (“[T]he court has the power and obligation to construe as a matter of law the meaning of language used in the patent claim, as such, a patent covers the invention which the court decides it describes and claims.”); [ACS Hosp. Sys., Inc. v. Montefiore Hosp.](#), 732 F.2d 1572, 1578 (Fed. Cir. 1984) (“Infringement is determined on the basis of the claims.”).

[FN29]. See [Litton Sys., Inc. v. Honeywell, Inc.](#), 140 F.3d 1449, 1454 (Fed. Cir. 1998) (“Literal infringement requires that the accused device contain each limitation of the claim exactly; any deviation from the claim precludes a finding of literal infringement.”).

[FN30]. See [Schumacher v. Cornell](#), 96 U.S. 549 (1877) (holding that a patentee “must stand by his claim as he has made it. If more or less than the whole of his ingredients are used by another, such party is not liable as an infringer, because he has not used the invention or discovery patented. With the change of the elements the identity of the product disappears.”); [Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.](#), 206 F.3d 1408, 1415 (Fed. Cir. 2000) (“Absent any limitation of a patent claim, an accused device cannot be held to literally infringe the claim.”); [Spectrum Int'l, Inc. v. Sterlite Corp.](#), 164 F.3d 1372, 1380 (Fed. Cir. 1998) (“[I]f even one limitation is missing or not met as claimed, there is no literal infringement.”); [Kahn v. Gen. Motors Corp.](#), 135 F.3d 1472, 1477 (Fed. Cir. 1998), cert. denied, 525 U.S. 875 (1998) (“Literal infringement of a claim exists when every limitation recited in the claim is found in the accused device.”); [Engel Indus., Inc. v. Lockformer Co.](#), 96 F.3d 1398 (Fed. Cir. 1996) (For literal infringement, the “properly construed claim reads on the device exactly.”).

[FN31]. It is also instructive to note that the patentee bears the burden of proving infringement. See [Wilson Sporting Goods v. David Geoffrey & Assoc.](#), 904 F.2d 677, 685 (Fed. Cir. 1990) (“The patent owner has always borne the burden of proving infringement.”) (citations omitted).

[FN32]. [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 732 (2002) (Festo II).

[FN33]. See [EMI Group N. Am., Inc. v. Intel Corp.](#), 157 F.3d 887, 896 (Fed. Cir. 1998) (recognizing that the doctrine of equivalents has its roots in equity “to prevent a fraud on the patent, when an accused infringer is ‘stealing the benefit of the invention’ by making insubstantial changes that avoid the literal scope of the claims.”) (citations omitted); [Loctite Corp. v. Ultraseal Ltd.](#), 781 F.2d 861, 870 (Fed. Cir. 1985) (noting that the doctrine of equivalents has been “judicially devised to do equity”).

[FN34]. See [Festo II](#), 535 U.S. at 731 (holding that the “nature of language makes it impossible to capture the essence of a thing in a patent application.”); [Graver Tank & Mfg. Co. v. Linde Air Prods. Co.](#), 339 U.S. 605, 607 (1950) (noting that to limit the inventor to the literal scope of the claims “would place the inventor at the mercy of verbalism and would be subordinating substance to form”).

[FN35]. The doctrine of equivalents serves the important judicially-created necessity of determining infringement without the risk of injustice that may result from a blindered focus on words alone.... While requiring a look at all the words while resisting their tyranny, and requiring, because the claims measure the invention, a look at all claim limitations, the doctrine [of equivalents], in a proper case, tempers unsparing logic and prevents an infringer from stealing the benefits of an invention. In that sense, the doctrine recognizes a fact of the real business world: words are not misappropriated; claimed inventions are.

[Laitram Corp. v. Cambridge Wire Cloth Co.](#), 863 F.2d 855, 856-57 (Fed. Cir. 1988) (quoting [Graver Tank](#), 339 U.S. at 608).

[FN36]. See [Festo II](#), 535 U.S. at 731 (“If patents were always interpreted by their literal terms, their value would be greatly diminished. Unimportant and insubstantial substitutes for certain elements could defeat the patent, and its value to inventors could be destroyed by simple acts of copying.”); see [Graver Tank](#), 339 U.S. at 607 (holding that “to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing”).

[FN37]. [Perkin-Elmer Corp. v. Westinghouse Elec. Corp.](#), 822 F.2d 1528, 1532 (Fed. Cir. 1987).

[FN38]. See, e.g., [Toro Co. v. White Consol. Indus., Inc.](#), 266 F.3d 1367, 1372 (Fed. Cir. 2001).

[FN39]. See [Multiform Desiccants, Inc., v. Medzam, Ltd.](#), 133 F.3d 1473, 1480 (Fed. Cir. 1998) (“[T]he doctrine of equivalents balances the purpose of fairness to inventors lest the patent be unjustly circumvented, against the purpose of patent claims to state clear boundaries of the patent grant, in fair notice of its scope.”).

[FN40]. See [Festo II](#), 535 U.S. at 731 (noting that ambiguity is a necessary price).

[FN41]. See [id.](#) at 727 (noting that the doctrine of equivalents creates uncertain boundaries).

[FN42]. [Id.](#)

[FN43]. See [id.](#) at 732 (noting that an uncertain scope of patent rights may discourage legitimate, noninfringing products and encourage mistaken investment).

[FN44]. See [Sony Corp. of Am. v. Universal City Studios, Inc.](#), 464 U.S. 417, 429, (1984) (holding that the patent system “is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired.”); [Graver Tank & Mfg. Co. v. Linde Air Prods. Co.](#), 339 U.S. 605, 607 (1950) (holding that to limit claim interpretation to literalism would “foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system.”).

[FN45]. See [Rhone-Poulenc Agro, S.A. v. DeKalb Genetics Corp.](#), 271 F.3d 1081, 1088 (Fed. Cir. 2001) (“[F]ederal patent policy seeks to encourage the disclosure of new, useful, and non-obvious inventions by granting the inventor the exclusive right to exclude others from making, using, or selling the invention for a period of years.”); see also [Pennock v. Dialogue](#), 27 U.S. 1 (1829) (holding that “the main object [of the patent system] was ‘to promote the progress of science and useful arts;’ and this could be done best, by giving the public at large a right to make, construct, use, and vend the thing invented, at as early a period as possible; having due regard to the rights of the inventor”).

[FN46]. See [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17, 29 (1997) (“There can be no denying that the doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement.”).

[FN47]. See [Marquip, Inc. v. Fosber Am., Inc.](#), 198 F.3d 1363, 1366 (Fed. Cir. 2000) (“To infringe under the doctrine of equivalents, the accused product must contain each claim element or its equivalent.”).

[FN48]. While a doctrine of equivalents analysis is a question of fact, the determination of whether an asserted equivalent is contained in the prior art is a question of law for the court. See [Ultra-Tex Surfaces, Inc. v. Hill Bros. Chem. Co.](#), 204 F.3d 1360, 1363 (Fed. Cir. 2000) (“Whether an asserted scope of equivalents would impinge on prior art is an issue of law that we review de novo.”); [Stream-feeder, LLC v. Sure-Feed Sys., Inc.](#), 175 F.3d 974, 981 (Fed. Cir. 1999) (“Determining whether the scope of equivalents accorded to a particular claim would encompass the prior art is an issue of law which we review de novo.”).

[FN49]. The term claim element refers to a subpart of a claim that defines a particular aspect of an invention.

[FN50]. See [Graver Tank & Mfg. Co.](#), 339 U.S. 605, 608 (1950) (holding that the doctrine of equivalents is founded on the theory that “if two devices do the same work in substantially the same way, and accomplish the same result, they are the same, even though they differ in name, form or shape”) (citations omitted); [Union Paper-Bag Mach. Co. v. Murphy](#), 97 U.S. 120, 125 (1878) (“[T]he substantial equivalent of a thing, in the sense of patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish the same result, they are the same, even though they differ in name, form or shape.”).

[FN51]. An analysis of the role played by each element in the context of the specific patent claim will thus inform the inquiry as to whether a substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claimed element. [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17, 40 (1997); [Bates v. Coe](#), 98 U.S. 31, 42 (1878) (holding that a device is the legal equivalent of a claim element “if it performs substantially the same function or office in substantially the same way to obtain substantially the same result”).

[FN52]. [Warner-Jenkinson Co.](#), 520 U.S. at 40.

[FN53]. Initially, the equivalent aspect of the accused device must perform the same function as the claim element at issue. On the other hand, it is permissible for the accused device to perform func-

tions in addition to those performed by the claim element. See [Miles Labs., Inc. v. Shandon, Inc.](#), 997 F.2d 870, 877 (Fed. Cir. 1993) (“Infringement under the doctrine does not vanish merely because the accused device performs functions in addition to those performed by the claimed device.”); [Insta-Foam Prods., Inc. v. Universal Foam Sys., Inc.](#), 906 F.2d 698, 702 (Fed. Cir. 1990) (“[I]nfringement under the doctrine of equivalents is not precluded merely because the accused device performs functions in addition to those performed by the claimed device.”). However, if the element does not perform the same function, then there is no infringement. See [Multiform Desiccants, Inc. v. Medzam, Ltd.](#), 133 F.3d 1473, 1480-81 (Fed. Cir. 1998) (finding no infringement where accused device did not perform the same function as the claim element). The function inquiry is premised upon a comparison of an aspect of the accused device with the claim element at issue and asks whether the two structures perform the same task. See [Stryker Corp. v. Davol, Inc.](#), 234 F.3d 1252, 1257 (Fed. Cir. 2000) (finding no equivalence where the accused device did not perform the same task as the claim element).

[FN54]. While the function inquiry tends to be relatively straightforward, the way inquiry is an intensely factual one. See [Leggett & Platt, Inc. v. Hickory Springs Mfg., Co.](#), 285 F.3d 1353, 1359 (Fed. Cir. 2002) (holding that the way inquiry “is intensely factual”). It is insufficient that the equivalent aspect of the accused device performs the same function and achieves the same result. It must do so in the same manner as disclosed in the patent. See [Werner v. King](#), 96 U.S. 218 (1877) (“It is not only necessary to an infringement that the arrangement which infringes should perform the same service, or produce the same effect, but... it must be done in substantially the same way.”); [Engel Indus., Inc. v. Lockformer Co.](#), 96 F.3d 1398, 1406-07 (Fed. Cir. 1996) (“If the accused device performs a substantially different function or performs in a substantially different way or obtains a substantially different result, it does not infringe under the doctrine of equivalents.”).

[FN55]. The result achieved by the pertinent aspect of the accused device and the claim element must be substantially similar. [Engel Indus.](#), 96 F.3d at 1406-07.

[FN56]. Under this tripartite test, each of the three elements, function, way, and result are analyzed separately. See, e.g., [Graver Tank & Mfg. Co. v. Linde Air Prods. Co.](#), 339 U.S. 605, 608 (1950); [Elec. R.R. Signal Co. v. Hall Ry. Signal Co.](#), 114 U.S. 87, 96 (1885).

[FN57]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 733 (2002) (Festo II) (holding that the doctrine of equivalents “allows the patentee to claim those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes”); [Water-Meter Co. v. Desper](#), 101 U.S. 332, 335 (1879) (“It is equally well known that if any one of the parts is only formally omitted, and is supplied by a mechanical equivalent, performing the same office and producing the same result, the patent is infringed.”); [Winans v. Denmead](#), 56 U.S. 330, 343 (1853) (“The exclusive right to the thing patented is not secured, if the public are at liberty to make substantial copies of it, varying its form or proportions. And, therefore, the patentee, having described his invention, and shown its principles, and claimed it in that form which most perfectly embodies it, is, in contemplation of law, deemed to claim every form in which his invention may be copied, unless he manifests an intention to disclaim some of those forms.”); [Marquip, Inc. v. Fosber Am., Inc.](#), 198 F.3d 1363, 1366, 53 USPQ2d 1015 (Fed. Cir. 2000) (“The accused product is equivalent to a claimed element if the differences between the two are ‘insubstantial’ to one of ordinary skill in the art.”) (citing [Warner Jenkinson Co.](#), 520 U.S. at 40 (citations omitted));

[Sage Prods., Inc. v. Devon Indus., Inc.](#), 126 F.3d 1420, 1424 (Fed. Cir. 1997) (recognizing that the doctrine of equivalents “prevents an accused infringer from avoiding infringement by changing only minor or insubstantial details of a claimed invention while retaining their essential functionality.”).

[FN58]. The term “one of ordinary skill in the art” refers to a fictional individual who possesses the knowledge and skills attributable to the average practitioner in the field of the invention. See, e.g., [In re Lee](#), 277 F.3d 1338 (Fed. Cir. 2001).

[FN59]. See [Graver Tank](#), 339 U.S. at 609 (“An important factor [in determining equivalence] is whether a person reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.”); [Vulcan Eng'g Co. v. Fata Aluminum, Inc.](#), 278 F.3d 1366, 1374 (Fed. Cir. 2002) (“Known interchangeability is an important factor in determining equivalence.”); [Interactive Pictures Corp. v. Infinite Pictures, Inc.](#), 274 F.3d 1371, 1382-83 (Fed. Cir. 2002) (“[T]he known interchangeability test looks to the knowledge of a skilled artisan to see whether that artisan would contemplate the interchange as a design choice.”); [Overhead Door Corp. v. Chamberlain Group, Inc.](#), 194 F.3d 1261, 1270 (Fed. Cir. 1999) (“[T]he Supreme Court has acknowledged that interchangeability can be one of the hallmarks of an equivalent.”).

[FN60]. See [Caterpillar, Inc. v. Deere & Co.](#), 224 F.3d 1374, 1380 (Fed. Cir. 2000) (finding that known interchangeability is persuasive evidence of equivalence).

[FN61]. See [Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.](#), 145 F.3d 1303, 1309 (Fed. Cir. 1998) (“Moreover, a finding of known interchangeability, while an important factor in determining equivalence, is certainly not dispositive.”).

[FN62]. See [Kokomo Fence Mach. Co. v. Kitselman](#), 189 U.S. 8, 24 (1903) (finding no equivalence where the device element and claim element were not interchangeable).

[FN63]. It is of no moment that the interchangeability of the particular elements is found in the prior art, see [Fiskars, Inc. v. Hunt Mfg., Co.](#), 221 F.3d 1318, 1324 (Fed. Cir. 2000) (noting that it is incorrect to assume that an element found in the prior art is not a permissible equivalent), as long as the entire claimed invention is not disclosed in the prior art. See [Corning Glass Works v. Sumitomo Elec. U.S.A.](#), 868 F.2d 1251, 1261 (Fed. Cir. 1989) (“Nothing is taken from the ‘public domain’ when the issue of equivalency is directed to a limitation only, in contrast to the entirety of the claimed invention.”).

[FN64]. See [Roton Barrier Inc. v. Stanley Works](#), 79 F.3d 1112, 1128 (Fed. Cir. 1996) (Nies, J., concurring) (stating that “[e]vidence of a patent covering the change... is clearly relevant unless the patent is invalid, [because]... substitution in a patented invention cannot be both nonobvious and insubstantial”).

[FN65]. See [Zygo Corp. v. Wyko Corp.](#), 79 F.3d 1563, 1570 (Fed. Cir. 1996) (“The nonobviousness of the accused device, evidenced by the grant of a United States patent, is relevant to the issue of whether the change therein is substantial.”).

[FN66]. *Id.*

[FN67]. [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17, 40 (1997).

[FN68]. See [Catalina Mktg. Int'l, Inc. v. Coolsavings.Com, Inc.](#), 289 F.3d 801, 813 (Fed. Cir. 2002) (“An element in the accused product is equivalent to a claim limitation if the differences between the two are ‘insubstantial’ to one of ordinary skill in the art.”) (citing [Warner-Jenkinson Co.](#), 520 U.S. at 40); *id.* “Insubstantiality may be determined by whether the accused device ‘performs substantially the same function in substantially the same way to obtain the same result’ as the claim limitation.”) (citing [Graver Tank & Mfg. Co.](#), 339 U.S. at 608).

[FN69]. [Wright Med. Tech., Inc. v. Osteonics Corp.](#), 122 F.3d 1440, 1444 (Fed. Cir. 1997).

[FN70]. See [Kraft Foods, Inc. v. Int'l Trading Co.](#), 203 F.3d 1362, 1371 (Fed. Cir. 2000) (“Equivalence is shown by evidence that the accused device contains an element that is not substantially different from any claim element that is literally lacking, [citing [Warner-Jenkinson Co.](#), 520 U.S. at 40] or that the claimed limitation and the accused component ‘perform[] substantially the same function in substantially the same way to achieve substantially the same result.’”) (citing [Ethicon Endo-Surgery Inc. v. United States Surgical Corp.](#), 149 F.3d 1309, 1321 (Fed. Cir. 1998).

[FN71]. See [Interactive Pictures Corp. v. Infinite Pictures, Inc.](#), 274 F.3d 1371, 1376 (Fed. Cir. 2002) (“Determination of infringement by equivalents is an issue of fact...”); [Viskase Corp. v. Am. Nat'l Can Co.](#), 261 F.3d 1316, 1324, 59 USPQ2d 1823, 1829 (Fed. Cir. 2001) (noting that determination of infringement under doctrine of equivalents is a factual issue) (citing [Bai v. L & L Wings, Inc.](#), 160 F.3d 1350, 1353 (Fed. Cir. 1998)).

[FN72]. See *supra* notes 50-56 and accompanying text (explaining function-way-result test); *supra* notes 57-66 and accompanying text (explaining insubstantial differences test).

[FN73]. See, e.g., [Lockheed Martin Corp. v. Space Sys. / Loral, Inc.](#), 249 F.3d 1314, 1323 (Fed. Cir. 2001).

[FN74]. See [Exhibit Supply Co. v. Ace Patents Corp.](#), 315 U.S. 126, 136 (1942) (noting that a patentee cannot recapture claims which the patentee has surrendered by amendment); [Loral Fairchild Corp. v. Sony Corp.](#), 181 F.3d 1313, 1322 (Fed. Cir. 1999), cert. denied, 120 S. Ct. 789 (2000) (“The touchstone of prosecution history estoppel is that the a patentee is unable to reclaim through the doctrine of equivalents what was surrendered or disclaimed in order to obtain the patent.”); [Haynes Int'l Inc. v. Jessop Steel Co.](#), 8 F.3d 1573, 1577 (Fed. Cir. 1993) (“A patentee [through prosecution history estoppel] should not be able to obtain, through litigation, coverage of subject matter relinquished during prosecution.”).

[FN75]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 733 (2002) (Festo II) (holding that prosecution history estoppel limits the doctrine of equivalents); [Graham v. John Deere Co. of Kansas City](#), 383 U.S. 1, 33 (1966) (holding that “claims that have been narrowed in order to obtain the issuance of a patent... cannot be sustained to cover that which was previously by limitation eliminated from the patent.”) (citing [Powers-Kennedy Co. v. Concrete Co.](#), 282 U.S. 175, 185-86 (1930); [Pharmacia & Upjohn Co. v. Mylan Pharms., Inc.](#), 170 F.3d 1373, 1376 (Fed. Cir. 1999) (“Prosecution history estoppel precludes a patentee from obtaining under the doctrine of equivalents coverage of subject matter that has been relinquished during prosecution of its patent applica-

tion.”). It is instructive to note that prosecution history estoppel cannot be founded on statements in the written description portion of the issued patent itself. Those statements, as a part of the public record, however, may be used to interpret the claim language. As such, statements in the patent itself that distinguish the invention over the prior art may be used to interpret the claims but do not create an estoppel. [Gart v. Logitech, Inc.](#), 254 F.3d 1334, 1344 n.2, (Fed. Cir. 2001). But see [J & M Corp. v. Harley-Davidson, Inc.](#), 269 F.3d 1360, 1366 (Fed. Cir. 2001) (“The scope of equivalents may also be limited by statements in the specification that disclaim coverage of certain subject matter.”).

[FN76]. The prosecution history is used to define claim terms. See, e.g., [Fantasy Sports Props., Inc. v. Sportsline.Com, Inc.](#), 287 F.3d 1108, 1114 (Fed. Cir. 2002).

[FN77]. A second type of prosecution history estoppel, argument-based prosecution history estoppel, is premised on affirmative statements made during the prosecution of the patent. Arguments made to overcome prior art can equally evidence an admission sufficient to give rise to a finding of surrender.... Logically, this is true even when the arguments are made in the absence of any claim amendment. Amendment of a claim is not the only permissible predicate for establishing a surrender.

[Hester Indus., Inc. v. Stein, Inc.](#), 142 F.3d 1472, 1480 (Fed. Cir. 1998). Under the tenet that a patentee should be held to statements made to the PTO, argument-based prosecution history estoppel respects the imputed veracity of the statements in the file wrapper. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 172 F.3d 1361, 1371-72 (Fed. Cir. 1999), vacated en banc, 187 F.3d 1381 (Fed. Cir. 1999), vacated and remanded, 535 U.S. 722 (2002) (noting that prosecution history estoppel has its roots in the belief that “one who takes a position in order to obtain a benefit can not later disavow or take an inconsistent position after the requested benefit is obtained based on the position taken.”). For an affirmative statement to preclude a range of equivalents, that statement must “evinced a clear and unmistakable surrender of subject matter.” [Litton Sys., Inc. v. Honeywell, Inc.](#), 140 F.3d 1449, 1458 (Fed. Cir. 1998). A patentee will only be held to those statements that, when viewed in context, clearly indicate the disclaimer of subject matter. See [Read Corp. v. Portec, Inc.](#), 970 F.2d 816 (Fed. Cir. 1992) (“Every statement made by a patentee during prosecution to distinguish a prior art reference does not create a separate estoppel. Arguments must be viewed in context.”). Logically, it is only these clear statements that provide the necessary notice to the public about the scope of the invention.

[FN78]. See, e.g., [I.T.S. Rubber Co. v. Essex Rubber Co.](#), 272 U.S. 429, 443-45 (1926); [Weber Elec. Co. v. E. H. Freeman Elec. Co.](#), 256 U.S. 668, 677-78 (1921); [Shepard v. Carrigan](#), 116 U.S. 593, 598 (1886); [Sage Prods., Inc. v. Devon Indus., Inc.](#), 126 F.3d 1420, 1432-33 (Fed. Cir. 1997); [Pall Corp. v. Micron Separations, Inc.](#), 66 F.3d 1211, 1219 (Fed. Cir. 1995); [Env'tl. Instrs., Inc. v. Sutron Corp.](#), 877 F.2d 1561, 1566 (Fed. Cir. 1989); [Mannesmann Demag Corp. v. Eng'd Metal Prods. Co.](#), 793 F.2d 1279, 1285 (Fed. Cir. 1986).

[FN79]. See [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17, 29 (1997) (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention....”); [Becton Dickinson & Co. v. C. R. Bard, Inc.](#), 922 F.2d 792, 798 (Fed. Cir. 1990) (“All limitations in a claim are material and must be met exactly or equivalently in an accused device to find that the accused device works in the same way.”).

[FN80]. [Bose Corp. v. JBL, Inc.](#), 274 F.3d 1354, 1358-59 (Fed. Cir. 2001).

[FN81]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 734 (2002) (Festo II) (noting that prosecution history estoppel is founded on a comparison between the difference between the original claim and the amended claim).

[FN82]. See, e.g., [I.T.S. Rubber](#), 272 U.S. at 443-44.

[FN83]. See [Graham v. John Deere Co.](#), 383 U.S. 1, 33 (1966) (“Claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent.”).

[FN84]. See [In re Hiniker Co.](#), 150 F.3d 1362 (Fed. Cir. 1998) (noting that the scope of a patent is determined by its claims).

[FN85]. See [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17, 29 (1997) (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention....”); [Becton Dickinson & Co. v. C. R. Bard, Inc.](#), 922 F.2d 792, 798 (Fed. Cir. 1990) (“[A]ll limitations in a claim are material and must be met exactly or equivalently in an accused device to find that the accused device works in the same way.”).

[FN86]. It is a rule of patent construction consistently observed that a claim in a patent as allowed must be read and interpreted with reference to claims that have been cancelled or rejected and the claims allowed cannot by construction be read to cover what was thus eliminated from the patent. The patentee may not, by resort to the doctrine of equivalents, give to an allowed claim a scope which it might have had without amendments, the cancellation of which amounts to a disclaimer.

[Schriber-Schroth Co. v. Cleveland Trust Co.](#), 311 U.S. 211, 220-21 (1940); see also [Mycogen Plant Science, Inc. v. Monsanto Co.](#), 252 F.3d 1306, 1319-20 (Fed. Cir. 2001) (holding that there is no “legally significant difference between canceling a claim having a broad limitation and replacing it with a claim having a narrower limitation, and amending a claim to narrow a limitation.”); [Diversitech Corp. v. Century Steps, Inc.](#), 850 F.2d 675, 681 (Fed. Cir. 1988) (“When an accused device is the same as a disclosed embodiment, and claims covering the disclosed embodiment were rejected on appeal and canceled, the yielded claim scope can not be recovered in order to encompass the accused device through the doctrine of equivalents.”).

[FN87]. See [EMI Group N. Am., Inc. v. Intel Corp.](#), 157 F.3d 887, 898 (Fed. Cir. 1998) (“Cancellation of a claim that is written broadly does not always generate an estoppel to narrower subject matter. The particular facts must be considered.”).

[FN88]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 172 F.3d 1361, 1371-72 (Fed. Cir. 1999), vacated, 187 F.3d 1381 (Fed. Cir. 1999), vacated and remanded, 535 U.S. 722 (2002) (“Patent prosecution is a public record, and after grant of the patent the public has full access to the examiner’s objections and the patentee’s responses along the path to the grant.”); see, e.g., [Texas Instrs. Inc. v. U.S. Int’l Trade Comm’n](#), 988 F.2d 1165, 1173 (Fed. Cir. 1993). The prosecution history is “[t]he entire record of proceedings in the Patent and Trademark Office, including representations made to the Examiner that the invention is patentable....” [Jonsson v. Stanley Works](#), 903 F.2d 812, 817 (Fed. Cir. 1990).

[T]he prosecution history (sometimes called “file wrapper contents”) of the patent consists of the entire record of proceedings in the Patent and Trademark Office. This includes all express rep-

representations made by or on behalf of the applicant to the examiner to induce a patent grant, or, as here to reissue a patent. Such representations include amendments to the claims and arguments made to convince the examiner that the claimed invention meets the statutory requirements of novelty, utility, and nonobviousness.

[Standard Oil Co. v. Am. Cyanamid Co.](#), 774 F.2d 448, 452 (Fed. Cir. 1985).

[FN89]. Determination of the scope of an estoppel deriving from actions taken before the Patent and Trademark Office requires review of not only the nature of such actions, but the reasons therefore: the prior art thereby distinguished, and the examiner's objections thereby overcome. The reasons for amendment of claims during patent prosecution necessarily depend on the facts and circumstances of the particular case. In cases where a patentee's amendments were not required in response to an examiner's rejection or critical to the allowance of the claims, no estoppel has been found.

[CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co.](#), 224 F.3d 1308, 1319 (Fed. Cir. 2000) (“It is the totality of the prosecution history which defines and establishes the metes and bounds of the patent grant.”); [Mannesmann Demag Corp. v. Eng'd Metal Prods. Co.](#), 793 F.2d 1279, 1284-85 (Fed. Cir. 1986); [Southwall Techs.](#), 54 F.3d at 1582 (“[T]he prosecution history must be examined as a whole in determining whether, based on a particular argument, a particular estoppel applies.”).

[FN90]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 737 1840 (2002) (Festo II) (“Though prosecution history estoppel can bar challenges to a wide range of equivalents, its reach requires an examination of the subject matter surrendered by the narrowing amendment.”); [Bose Corp. v. JBL, Inc.](#), 274 F.3d 1354, 1358-59 (Fed. Cir. 2001) (“To decide whether a claim amendment gives rise to prosecution history estoppel, a court first must determine what claim limitations are alleged to be met by equivalents, whether the limitations at issue were amended during prosecution, and whether a patentee's amendment narrowed the literal scope of the claim.”).

[FN91]. [Loral Fairchild Corp. v. Sony Corp.](#), 181 F.3d 1313, 1326-27 (Fed. Cir. 1999), cert. denied, 528 U.S. 1075 (2000).

[FN92]. See, e.g., [Intermatic Inc. v. Lamson & Sessions Co.](#), 273 F.3d 1355, 1363 (Fed. Cir. 2001); [Bose Corp. v. JBL, Inc.](#), 274 F.3d 1354, 1358 (Fed. Cir. 2001); [K-2 Corp. v. Salomon S.A.](#), 191 F.3d 1356, 1368 (Fed. Cir. 1999); [Pall Corp. v. Hemasure, Inc.](#), 181 F.3d 1305, 1311 (Fed. Cir. 1999); [Augustine Med., Inc. v. Gaymar Indus.](#), 181 F.3d 1291 (Fed. Cir. 1999); [Cybor Corp. v. FAS Techs., Inc.](#), 138 F.3d 1448, 1460 (Fed. Cir. 1998) (en banc).

[FN93]. See [Bayer AG v. Elan Pharm. Research Corp.](#), 212 F.3d 1241, 1254 (Fed. Cir. 2000) (“The standard for determining whether particular subject matter was relinquished... is an objective one which we determine as a matter of law.”) (citing [Modine Mfg. Co. v. United States Int'l Trade Comm'n](#), 75 F.3d 1545, 1555-56 (1996)).

[FN94]. [Cybor Corp.](#), 138 F.3d at 1457; see also [Bayer](#), 212 F.3d at 1252 (“An objective standard is applied when looking at the prosecution history, the proper inquiry being ‘whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter.’”) (citations omitted); [Augustine Med.](#), 181 F.3d at 1298 (“To determine the scope of estoppel, this court examines objectively whether a competitor would reasonably conclude that an applicant's prosecution conduct had surrendered the disputed subject matter.”); [Loral Fairchild](#), 181 F.3d at 1327 (“[T]he entire

record must be analyzed using an objective standard to determine what has been surrendered during prosecution.”); [Sextant Avionique S.A. v. Analog Devices, Inc.](#), 172 F.3d 817, 826-27 (Fed. Cir. 1999) (“The scope of estoppel, i.e., what subject matter has been surrendered during prosecution by the patentee, is to be viewed from the vantage point of a reasonable competitor of the patentee, and is determined with reference to the prior art and any amendments and/or arguments made in an attempt to distinguish such art.”); [Desper Prods., Inc. v. QSound Labs, Inc.](#), 157 F.3d 1325, 1338 (Fed. Cir. 1998) (“In determining the scope of what, if any, subject matter has been surrendered, the standard is an objective one: what would a reasonable competitor reading the prosecution history conclude has been surrendered.”); [Litton Sys., Inc. v. Honeywell, Inc.](#), 140 F.3d 1449, 1462 (Fed. Cir. 1998) (“As a basic proposition, the standard for determining whether subject matter has been relinquished is whether one of ordinary skill in the art would objectively conclude from the prosecution history that an applicant surrendered it.”); [Insituform Techs., Inc. v. Cat Contracting Inc.](#), 99 F.3d 1098, 1107-08 (Fed. Cir. 1996) (“[T]he standard for determining what subject matter was surrendered is objective and depends on what a competitor, reading the prosecution history, would reasonably conclude was given up by the applicant.”); [Zenith Labs. Inc. v. Bristol Myers Squibb Co.](#), 19 F.3d 1418, 1424 (Fed. Cir. 1994) (“The legal standard for determining what subject matter was relinquished is an objective one, measured from the vantage point of what a competitor was reasonably entitled to conclude, from the prosecution history, that the applicant gave up to procure issuance of the patent.”).

[FN95]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 172 F.3d 1361, 1371-72 (Fed. Cir. 1999), vacated en banc, 187 F.3d 1381 (Fed. Cir. 1999), vacated and remanded, 535 U.S. 722 (2002) (noting that prosecution history estoppel has its roots in the belief that “one who takes a position in order to obtain a benefit can not later disavow or take an inconsistent position after the requested benefit is obtained based on the position taken.”).

[FN96]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 740 (2002) (Festo II) (holding that “[w]hen the patentee has chosen to narrow a claim, courts may presume the amended text was composed with awareness of this rule and that the territory surrendered is not an equivalent of the territory claimed. In those instances, however, the patentee still might rebut the presumption that estoppel bars a claim of equivalence”).

[FN97]. Id. at 1842 (“A patentee’s decision to narrow his claims through amendment may be presumed to be a general disclaimer of the territory between the original claim and the amended claim.”); [Exhibit Supply Co. v. Ace Patents Corp.](#), 315 U.S. 126, 136-37 (1942) (“The difference which he thus disclaimed must be regarded as material, and since the amendment operates as a disclaimer of the difference it must be strictly construed against him.”); [I.T.S. Rubber Co. v. Essex Rubber Co.](#), 272 U.S. 429, 443 (1926) (holding that a claim amendment “must be strictly construed against the inventor and looked upon as disclaimers.”); [Sargent v. Hall Safe & Lock Co.](#), 114 U.S. 63, 86 (1885) (holding that claim amendment “must be strictly construed against the inventor and in favor of the public, and looked upon as in the nature of disclaimers”).

[FN98]. Prosecution history estoppel is an adaptation of the common law of estoppel to the processes of patent examination. Tracing its origins to [Sutter v. Robinson](#), 119 U.S. 530, 541 (1886), the Court in [Warner-Jenkinson](#) reinforced the equitable rule that one who takes a position to obtain a benefit can not later disavow or take an inconsistent position after the requested benefit is obtained based on the position taken.

[Festo Corp.](#), 172 F.3d at 1371-72, 50 USPQ2d at 1391 (Fed. Cir. 1999); see also [Smith v. Snow](#), 294 U.S. 1, 11 (1935) (“It is a familiar rule that a patentee cannot broaden his claim by dropping from it an element which he was compelled to add in order to secure his patent.”).

[FN99]. See [Odiorne v. Winkley](#), 18 F. Cas. 581, 582 (C.C.D. Mass. 1814) (“The first question for consideration is, whether the machines used by the defendant are substantially, in their principles and mode of operation, like plaintiff’s machines.... Mere colorable alterations of a machine are not sufficient to protect the defendant.”); [Gray v. James](#), 10 F. Cas. 1015, 1016 (C.C.D. Pa. 1817) (“But we think it may safely be laid down as a general rule, that where machines are substantially the same, and operate in the same manner, to produce the same result, they must be in principle the same.”).

[FN100]. Historically, the Supreme Court would take a patent case only occasionally, with significant decisions on patent law being handed down every ten or twenty years. For example, the last truly significant changes in prosecution history estoppel, before the Court’s [Festo](#) opinion, were [Warner-Jenkinson](#), decided in 1997, and [Graham v. John Deere](#) decided in 1966. [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17 (1997); [Graham v. John Deere Co. of Kansas City](#), 383 U.S. 1, 33 (1966).

[FN101]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558, 572 (Fed. Cir. 2000) (en banc), rev’d 535 U.S. 722 (2002) ([Festo I](#)) (“[P]rior to creation of the Federal Circuit, some regional circuits had followed a flexible bar approach to prosecution history estoppel, whereas others had applied a strict rule of complete surrender when prosecution history estoppel applied.”).

[FN102]. U.S. District Courts have exclusive jurisdiction over patent cases. 28 U.S.C. § 1338 (2003).

[FN103]. See *infra* notes 138-42 and accompanying text (discussing flexible bar).

[FN104]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 728 (2002) ([Festo II](#)) (noting that the cylinder has been employed in diverse machinery).

[FN105]. The saga actually began in 1997 with [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17 (1997).

[FN106]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558, 566, 574-75 (Fed. Cir. 2000) (en banc), rev’d 535 U.S. 722 (2002) ([Festo I](#)) (explaining complete bar rule).

[FN107]. [Festo II](#), 535 U.S. 722 (2002).

[FN108]. [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 344 F.3d 1359 (2003) ([Festo III](#)).

[FN109]. In the face of over 100 years of Supreme Court case law, today’s en banc majority lacks authority to establish a complete bar rule. The majority also abruptly abandons 18 years of unvarying Federal Circuit precedent as articulated in over 50 decisions and does so without showing their error.

[Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d at 619 (Fed. Cir. 2000) (en banc), rev’d 535 U.S. 722, (2002) ([Festo I](#)) (Michel, J., dissenting-in-part).

[FN110]. See *infra* notes 134-35 and accompanying text (discussing complete bar rule).

[FN111]. See [Festo I](#), 234 F.3d 558, 566-79 (discussing amendments that invoke estoppel and estoppel's scope).

[FN112]. See [id.](#) at 566-69 (discussing amendments that invoke estoppel).

[FN113]. See [id.](#) at 569-79 (discussing scope of estoppel).

[FN114]. The Patent Act is Title 35 of the U.S. Code. See also [infra](#) notes 122-27 and accompanying text (discussing which claim amendments invoke estoppel).

[FN115]. See [infra](#) notes 128-32 and accompanying text (discussing Warner-Jenkinson presumption).

[FN116]. See [Festo I](#), 234 F.3d at 574 (“We hold that prosecution history estoppel acts as a complete bar to the application of the doctrine of equivalents when an amendment has narrowed the scope of a claim for a reason related to patentability.”).

[FN117]. The Festo saga began in 1994 with an opinion from the U.S. District Court for the District of Massachusetts, [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), No. 88-1814-PBS (D. Mass. 1994), which the Federal Circuit initially affirmed in [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 72 F.3d 857 (Fed. Cir. 1995), vacated and remanded, 520 U.S. 1111 (1997). In 2000, the Federal Circuit, in an en banc opinion, [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558 (Fed. Cir. 2000) (en banc), rev'd, 535 U.S. 722 (2002) (Festo I), reconsidered its holding in light of [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17 (1997).

[FN118]. An amendment made for a reason related to patentability means an amendment made to satisfy the statutory requirements of the Patent Act. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 736 (2002) (Festo II) (“a narrowing amendment made to satisfy any requirement of the Patent Act may give rise to an estoppel.”); see also [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 344 F.3d 1359, 1366 (2003) (Festo III) (“To begin with, we recognize that the Court expressly endorsed our holding that a narrowing amendment made to comply with any provision of the Patent Act, including § 112, may invoke an estoppel.”). The category of amendments made to comply with any requirement of the Patent Act is a broad one. This category includes not only amendments made to overcome prior art rejections, but also those more cosmetic amendments made to comply with §112. An amendment to clarify the language of a claim falls under §112 and thus qualifies for prosecution history estoppel. See 35 U.S.C. §112 (2004) (listing requirements for patent applications).

[FN119]. For the purposes of determining whether an amendment gives rise to prosecution history estoppel, a “substantial reason related to patentability” is not limited to overcoming or avoiding prior art, but instead includes any reason which relates to the statutory requirements for a patent. Therefore, a narrowing amendment made for any reason related to the statutory requirements for a patent will give rise to prosecution history estoppel with respect to the amended claim element.

[Festo I](#), 234 F.3d at 566; see also [Loral Fairchild Corp. v. Sony Corp.](#), 181 F.3d 1313, 1323 (Fed. Cir. 1999), cert. denied, 120 S. Ct. 789 (2000) (“Prosecution history estoppel is a legal question subject to de novo review on appeal. Thus, we review, without deference to the district court, whether the amendment made to the claims during prosecution of the application had a purpose related to patentability which would give rise to an estoppel and, if so, what claim coverage had been sur-

rendered.”).

[FN120]. See [35 U.S.C. §§102-103 \(2004\)](#) (enumerating statutory basis for prior art rejection of claim).

[FN121]. See [id. § 112](#) (enumerating textual claim requirements).

[FN122]. See [Warner-Jenkinson Co., 520 U.S. at 31-32](#) (holding that not every amendment creates estoppel); [Life Prods., Inc. v. Am. Nat'l Water-Mattress Corp., 842 F.2d 323, 325 \(Fed. Cir. 1988\)](#) (“We have rejected the view that all amendments to claims operate as an estoppel in finding infringement under the doctrine of equivalents.”).

[FN123]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 \(Fed. Cir. 2000\)](#) (en banc), [rev'd, 535 U.S. 722 \(2002\)](#) (Festo I) (Newman, J., dissenting-in-part) (“Supreme Court and Federal Circuit precedent have well recognized that prosecution history estoppel flows from amendments on substantive grounds of patentability.”); [Fiskars, Inc. v. Hunt Mfg., Co., 221 F.3d 1318, 1321-22 \(Fed. Cir. 2000\)](#) (holding that claim amendment made for reasons not related to patentability does not give rise to estoppel); [Great N. Corp. v. Davis Core & Pad Co., 782 F.2d 159, 166 \(Fed. Cir. 1986\)](#) (finding no prosecution history estoppel even though applicant rewrote claims).

[FN124]. See [Warner-Jenkinson Co., 520 U.S. at 30-31](#) (“In each of our cases cited by petitioner and by the dissent below, prosecution history estoppel was tied to amendments made to avoid the prior art, or otherwise to address a specific concern--such as obviousness--that arguably would have rendered the claimed subject matter unpatentable.”) [Seal-Flex, Inc. v. Athletic Track and Court Constr., 172 F.3d 836, 844 \(Fed. Cir. 1999\)](#) (holding that a claim amendment made to overcome an indefiniteness rejection and not to avoid prior art did not create estoppel); [Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1219-20 \(Fed. Cir. 1995\)](#) (“A non-substantive change or a change that did not in fact determine patentability does not create an estoppel.”); [Sun Studs, Inc. v. ATA Equip. Leasing Inc., 872 F.2d 978, 990 \(Fed. Cir. 1989\)](#) (holding that amendments or statements made to overcome § 112 rejection do not create estoppel). Earlier Federal Circuit decisions cast the doctrine of equivalents in a more favorable light than later decisions. Compare [SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1101, 1120 \(Fed. Cir. 1985\)](#) (en banc) (refusing to apply prosecution history estoppel), with [Talbert Fuel Sys. Patents Co. v. Unocal Corp., 275 F.3d 1371, 1376-77 \(Fed. Cir. 2002\)](#) (applying prosecution history estoppel). Prior art rejections arise under [35 U.S.C. §§102-103](#). It is these two sections of the Patent Act that form the basis for most substantive claim rejections.

[FN125]. See [Bayer AG v. Elan Pharm. Research Corp., 212 F.3d 1241, 1252 \(Fed. Cir. 2000\)](#) (holding that estoppel for a claim amendment unrelated to patentability arises in the face of “a clear and unmistakable surrender of subject matter.”); [Litton Sys., Inc. v. Honeywell, Inc., 140 F.3d 1449, 1458 \(Fed. Cir. 1998\)](#) (“[I]f an applicant makes an amendment unrelated to patentability which evinces an unmistakable surrender, that action will preclude recapture of the surrendered subject matter under the doctrine of equivalents.”).

[FN126]. See [Graham v. John Deere Co., 383 U.S. 1, 33 \(1966\)](#) (“Claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent.”); [Talbert Fuel Sys. Patents Co. v. Unocal Corp., 347 F.3d 1355, 1359 \(Fed. Cir. 2003\)](#) (“When the prior art embraces the alleged

equivalent, and a narrowing amendment was made to avoid that equivalent, that subject matter cannot be found to have been unforeseeable at the time of the amendment.”); [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558, 567 (Fed. Cir. 2000) (en banc), rev'd 535 U.S. 722 (2002) (Festo I) (“The law has been clear that amendments made to avoid prior art give rise to prosecution history estoppel.”); [Sextant Avionique S.A. v. Analog Devices, Inc.](#), 172 F.3d 817, 826 (Fed. Cir. 1999) (holding that “prosecution history estoppel plainly applies” when a claim amendment is “clearly responsive to the examiner's prior art rejection.”).

[FN127]. See [Festo I](#), 234 F.3d at 633 (Newman, J., dissenting in part) (“The Court's emphasis on a ‘limited set of reasons’ is in striking contrast to the unconstrained estoppel established by the majority for any change made in connection with any provision of the Patent Act.”).

[FN128]. However,

“if the patent holder demonstrates that an amendment required during prosecution had a purpose unrelated to patentability, a court must consider that purpose in order to decide whether an estoppel is precluded.” If “the patent holder is unable to establish such a purpose, a court should presume that the purpose behind the required amendment is such that prosecution history estoppel would apply.”

[Festo I](#), 234 F.3d at 566 (quoting [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17, 40-41 (1997)).

[FN129]. [T]he better rule is to place the burden on the patent-holder to establish the reason for an amendment required during patent prosecution. The court then would decide whether that reason is sufficient to overcome prosecution history estoppel as a bar to application of the doctrine of equivalents to the element added by that amendment. Where no explanation is established, however, the court should presume that the PTO had a substantial reason related to patentability for including the limiting element added by amendment. In those circumstances, prosecution history estoppel would bar the application of the doctrine equivalents as to that element. The presumption we have described, one subject to rebuttal if an appropriate reason for a required amendment is established, gives proper deference to the role of claims in defining an invention and providing public notice, and to the primacy of the PTO in ensuring that the claims allowed cover only subject matter that is properly patentable in a proffered patent application.

[Warner-Jenkinson Co.](#), 520 U.S. at 33-34; accord [Sextant Avionique S.A. v. Analog Devices, Inc.](#), 172 F.3d 817, 828 (Fed. Cir. 1999) (“[I]f the patent prosecution record does not disclose the reason for an amendment, a court must presume that the amendment was made for purposes of patentability and that prosecution history estoppel applies, and provide the patentee with an opportunity to rebut that presumption.”).

[FN130]. [Warner-Jenkinson Co.](#), 520 U.S. at 33-34.

[FN131]. Under this presumption, a patentee may only rely on the public record of the prosecution history itself, and not on extrinsic evidence, to establish the reason for a claim amendment.

In order to give due deference to public notice considerations..., a patent holder seeking to establish the reason for an amendment must base his arguments solely upon the public record of the patent's prosecution, i.e., the patent's prosecution history. To hold otherwise--that is, to allow a patent holder to rely on evidence not in the public record to establish a reason for an amendment--would un-

determine the public notice function of the patent record.

[Festo I](#), 234 F.3d at 566, 574-75.

[FN132]. When determining whether prosecution history estoppel applies to limit the doctrine of equivalents, a court must examine the reason why an applicant amended a claim. If such examination indicates that a patent applicant has made a substantive change to his claim that clearly responds to an examiner's rejection of that claim as unpatentable over prior art, prosecution history estoppel applies to that claim; only the question of the scope of the estoppel remains. No presumption needs to be applied in such a case because the reason for the amendment is clear.

[Bai v. L & L Wings, Inc.](#), 160 F.3d 1350 (Fed. Cir. 1998).

[FN133]. See [Festo I](#), 234 F.3d at 566, 569 (“When a claim amendment creates prosecution history estoppel with regard to a claim element, there is no range of equivalents available for the amended claim element. Application of the doctrine of equivalents to the claim element is completely barred (a ‘complete bar’).”); see also Thomas P. Riley, [Prosecution History Estoppel: The Choice Between Public Interests and Inventors' Property Rights](#), 36 Val. U. L. Rev. 239, 260-61 (2001) (arguing that the Federal Circuit's *Festo I* decision eviscerated the doctrine of equivalents by disproportionately strengthening the role of prosecution history estoppel).

[FN134]. See [Festo I](#), 234 F.3d at 574-75 (explaining complete bar rule).

[FN135]. See *id.* at 576 (“Regardless of whether the amendment is explained or unexplained, if the amendment narrows the scope of the claim for a reason related to patentability, a complete bar to the doctrine of equivalents provides the public and the patentee with definite notice as to the scope of the claimed invention.”).

[FN136]. [Festo I](#), 234 F.3d at 566, 574-75, 587.

[FN137]. See *id.* at 578 (holding that complete bar applies to unexplained claim amendments subject to the Warner-Jenkinson presumption).

[FN138]. The dissenting judges in *Festo I* explained that the majority disregarded long-established Supreme Court precedent and at least fifty of its own cases in establishing the bright-line rule. [234 F.3d at 601-16](#).

[FN139]. See [Graham v. John Deere Co.](#), 383 U.S. 1, 33 (1966) (discussing flexible bar). It is instructive to note that the Supreme Court opened the door to complete bar in [Warner-Jenkinson Co. v. Hilton Davis Chem. Co.](#), 520 U.S. 17 (1997). In Warner-Jenkinson, the Supreme Court took the first steps in limiting the flexible bar approach. *Id.*

[FN140]. See [Hormone Research Found., Inc. v. Genentech, Inc.](#), 904 F.2d 1558, 1564 (Fed. Cir. 1990) (“This is not to say, however, that, whenever a limiting amendment or argument is made during prosecution, the patentee loses all coverage between what the claims literally cover and what they would have covered prior to the amendment or argument.”).

[FN141]. See [Festo I](#), 234 F.3d at 628 (Linn, J., dissenting in part) (“Depending on the nature and purpose of an amendment, it may have a limiting effect within a spectrum ranging from great to small

to zero. The effect may or may not be fatal to application of a range of equivalents broad enough to encompass a particular accused product.”). The doctrine of equivalents is an equitable doctrine. See 5 Donald S. Chisum, *Chisum on Patents* §18.05[1] (1997) (discussing the various theories behind estoppel).

Prosecution history estoppel is an adaptation of the common law of estoppel to the processes of patent examination. Tracing its origins to [Sutter v. Robinson](#), 119 U.S. 530, 541 (1886), the Court in *Warner-Jenkinson* reinforced the equitable rule that one who takes a position to obtain a benefit can not later disavow or take an inconsistent position after the requested benefit is obtained based on the position taken. [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 172 F.3d 1361, 1371-72 (Fed. Cir. 1999), vacated en banc, 187 F.3d 1381 (Fed. Cir. 1999), vacated and remanded, 535 U.S. 722 (2002).

[FN142]. See [Festo I](#), 234 F.3d at 572 (“We decided to apply prosecution history estoppel as a flexible bar, stating that prosecution history estoppel ‘may have a limiting effect’ on the doctrine of equivalents ‘within a spectrum ranging from great to small to zero.’”) (quoting [Hughes Aircraft Co. v. United States](#), 717 F.2d 1351, 1363 (Fed. Cir. 1983)).

[FN143]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 344 F.3d 1359, 1375 (2003) (*Festo III*) (Rader, J., concurring) (The court held that the “flexible rule engendered some imprecision. Nonetheless that rule--now discarded--sought to preserve expectations of patent applicants.”).

[FN144]. See [Festo I](#), 234 F.3d at 612-15 (Michel, J., dissenting in part) (enumerating long line of Federal Circuit precedent supporting flexible bar).

Precedent as to prosecution history estoppel is strikingly uniform in not only the judicial statement of the law, but in its application. There has been no groundswell of concern for unpredictable judicial application of the rules of estoppel, even by those who have expressed concern for unpredictable application by juries of the rules of equivalence.

See *id.* at 632.

[FN145]. See [Festo I](#), 234 F.3d at 577 (“A complete bar, unlike a flexible bar, thus lends certainty to the process of determining the scope of protection afforded by a patent.”).

[FN146]. See *id.* at 601-08 (discussing long line of Supreme Court precedent supporting flexible bar abandoned by Federal Circuit); *id.* at 623 (“This doctrine was borne of equity to allow room for justice to the patentee against those who manage to avoid the letter of the invention as it was claimed in the patent through unimportant and insubstantial changes.”).

[FN147]. In the first en banc decision, Judge Plager maintained that the doctrine of equivalents should be an equitable doctrine administered by the district judges.

Were this court to openly acknowledge that the doctrine of equivalents can only be legitimated by its equitable roots and should be treated as an equitable doctrine, important consequences would flow. Trial courts, sitting as courts of equity, would be responsible for deciding whether the doctrine of equivalents should be applied, not unlike the practice regarding the doctrine of inequitable conduct. On appeal to this court, we would review a trial court's determination under the deferential standard of abuse of discretion.

See [Festo I](#), 234 F.3d at 593. Judge Plager noted that the fact issues related to a determination of

claim equivalence are easily handled by district judge who routinely decide cases in equity. See [id. at 594](#) (“That infringement under the doctrine is a fact issue is of no moment; equity courts deal with facts all the time.”).

[FN148]. [Festo III](#), 344 F.3d at 1364.

[FN149]. [535 U.S. 722 \(2002\)](#) (*Festo II*). Numerous commentators have discussed the Supreme Court's *Festo* decision. See, e.g., Raymond Areuax, et al., *Festo's Doctrine of Equivalents: Vitality Reaffirmed in View of New and Old Hurdles*, 48 Loy. L. Rev. 551 (2002); Tony Caliendo, [Foreseeable Trouble: How Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. Offends Fundamental Policies of the U.S. Patent System by Making Prosecution History Estoppel Depend on Foreseeability](#), 2003 B.Y.U. L. Rev. 309 (2003); Kulaniakea Fisher, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ratcheting Down the Doctrine of Equivalents*, 17 B.Y.U. J. Pub. L. 345 (2003); John S. Golian, *Without a Net: The Supreme Court Attempts to Balance Patent Protection and Public Notice in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 36 Creighton L. Rev. 541 (2003); Sue Ann Mota, *The Doctrine of Equivalents and Prosecution History Estoppel: The Supreme Court Supports Flexibility over Certainty in Patent Cases in Festo v. SMC*, 9 Rich. J.L. & Tech. 1 (2002); John W. Schlicher, *The Law, History, and Policy of Prosecution History Estoppel in Patent Actions in the Supreme Court - Festo (Part II)*, 84 J. Pat. & Trademark Off. Soc'y 692 (2002); R. Flint Streat, *Festo to the Rescue? The Return of the Warner-Jenkinson Standard and a Preemptive Solution for the Future of the Patent Law Balance*, 91 Ky. L.J. 691 (2003); Steven H. VerSteeg, *Parallel Applications to Preserve the Doctrine of Equivalents in a Post Festo World*, 84 J. Pat. & Trademark Off. Soc'y 341 (2002); R. Polk Wagner, *Reconsidering Estoppel: Patent Administration and the Failure of Festo*, 151 U. Pa. L. Rev. 159 (2002).

[FN150]. *Festo II*, 535 U.S. at 726-27.

[FN151]. *Id.* at 738-39.

[FN152]. *Id.* at 727.

[FN153]. *Id.*

[FN154]. One of the most prominent patent law scholars notes that the Supreme Court, perhaps due to an adverse judicial attitude toward the patent system or an incomplete understanding of patent law, may not be carefully considering the patent law cases it reviews. Professor Chisum comments that the Supreme Court has made incorrect statements in several of its opinions on patent law. See Donald S. Chisum, *The Supreme Court and Patent Law: Does Shallow Reasoning Lead to Thin Law?*, 3 Marq. Intell. Prop. L. Rev. 1 (1999).

[FN155]. *Festo II*, 535 U.S. at 737-38. Numerous commentators have discussed the Federal Circuit's *Festo* decision. See, e.g., William M. Atkinson, et al., *Was Festo Really Necessary?*, Fed. Cir. Bar J. 111 (2001); Glen P. Belvis, *An Analysis of the En Banc Decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 11 Fed. Cir. Bar J. 59 (2002); Peter Corcoran, *The Scope of Claim Amendments, Prosecution History Estoppel, and the Doctrine of Equivalents After Festo VI*, 9 Tex. Intell. Prop. L.J. 159 (2001); John S. Golian, *Without a Net: The Supreme Court Attempts to Balance Patent Protection and Public Notice in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 36 Creighton

L. Rev. 541 (2003).

[FN156]. *Festo II*, 535 U.S. at 733-34.

[FN157]. *Id.*

[FN158]. *Id.*

[FN159]. *Id.* at 732.

[FN160]. *Id.* at 731.

[FN161]. *Id.* at 732.

[FN162]. *Id.* at 731.

[FN163]. *Id.*

[FN164]. *Id.* at 731-32.

[FN165]. *Id.* at 731.

[FN166]. See *Festo II*, 535 U.S. at 733 (“[E]quivalents remain a firmly entrenched part of the settled rights protected by the patent.”).

[FN167]. *Id.* at 731-32.

[FN168]. *Id.* at 731

[FN169]. *Id.* at 732-33.

[FN170]. *Id.* at 733-34.

[FN171]. *Id.*

[FN172]. *Id.* at 734.

[FN173]. *Id.* at 734-35. (“In that instance the prosecution history has established that the inventor turned his attention to the subject matter in question, knew the words for both the broader and narrower claim, and affirmatively chose the latter.”).

[FN174]. *Id.*

[FN175]. *Id.* at 736.

[FN176]. *Id.* at 737. One of the available responses to an Examiner's rejection is an appeal to the Board of Patent Interferences and Appeals. See, e.g., 37 C.F.R. § 1.191 (2002). This administrative tribunal is tasked with reviewing rejections that are appealed. However, very few rejections are ever appealed.

[FN177]. [Festo II](#), 535 U.S. at 737.

[FN178]. [Id.](#) at 737-38.

[FN179]. [Id.](#) at 737.

[FN180]. [Id.](#) at 738.

[FN181]. [Id.](#)

[FN182]. [Id.](#) at 740.

[FN183]. [Id.](#)

[FN184]. [Id.](#)

[FN185]. See [id.](#) at 741 (“[T]he patentee must show that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.”).

[FN186]. [Id.](#)

[FN187]. [Festo II](#), 535 U.S. at 740-41.

[FN188]. [Id.](#) at 740.

[FN189]. The doctrine of equivalents should remain an equitable doctrine. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558, 593 (Fed. Cir. 2000) (en banc), rev'd 535 U.S. 722 (2002) (Festo I) (Plager, J., concurring) (“A better solution would be to declare the doctrine of equivalents--a judge-made rule in the first place--to have its roots firmly in equity, and to acknowledge that when and in what circumstances it applies is a question of equitable law, a question for which judges bear responsibility.”).

[FN190]. [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 344 F.3d 1359, 1365 (Fed. Cir. 2003) (Festo III).

[FN191]. [Id.](#)

[FN192]. [Festo II](#), 535 U.S. at 741.

[FN193]. [Id.](#) at 740-41.

[FN194]. [Festo III](#), 344 F.3d at 1359.

[FN195]. See [id.](#) at 1374 (Rader, J., concurring) (“For a third (or perhaps a fourth) time, this court revisits some exceptions to an exception to an exception to the standard rule of infringement.”).

[FN196]. See [id.](#) at 1366 (“The first question in a prosecution history estoppel inquiry is whether an amendment filed in the Patent and Trademark Office (PTO) has narrowed the literal scope of a claim.”).

[FN197]. See *id.* (“If the amendment was not narrowing, then prosecution history estoppel does not apply.”).

[FN198]. *Id.*

[FN199]. See *id.* at 1367 (“In this regard, we reinstate our earlier holding that a patentee’s rebuttal of the Warner-Jenkinson presumption is restricted to the evidence in the prosecution history record.”).

[FN200]. See *id.* at 1366-67 (“When the prosecution history record reveals no reason for the narrowing amendment, Warner-Jenkinson presumes that the patentee had a substantial reason relating to patentability; consequently, the patentee must show that the reason for the amendment was not one relating to patentability if it is to rebut that presumption.”).

[FN201]. See *id.* at 1366 (“If the amendment was not narrowing, then prosecution history estoppel does not apply.”); *id.* at 1367 (“If the patentee successfully establishes that the amendment was not for a reason of patentability, then prosecution history estoppel does not apply.”).

[FN202]. If, however, the court determines that a narrowing amendment has been made for a substantial reason relating to patentability--whether based on a reason reflected in the prosecution history record or on the patentee’s failure to overcome the Warner-Jenkinson presumption--then the third question in a prosecution history estoppel analysis addresses the scope of the subject matter surrendered by the narrowing amendment.

Id. at 1367.

[FN203]. *Id.*

[FN204]. *Festo III*, 344 F.3d at 1367.

[FN205]. *Id.*

[FN206]. *Id.*

[FN207]. The rebuttal criteria, while replete with factual undertones, are questions for the court and not the jury. See *id.* at 1367 (holding that “rebuttal of the presumption of surrender is a question of law to be determined by the court, not a jury.”). See *id.* at 1368 n.3 (“We recognize that rebuttal of the presumption may be subject to underlying facts, which we discuss in more detail below. Nonetheless, the resolution of factual issues underlying a legal question may properly be decided by the court.”).

[FN208]. *Id.* at 1369. The term “one of ordinary skill in the art” refers to a fictional individual who possesses the knowledge and skills attributable to the average practitioner in the field of the invention. See, e.g., *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002).

[FN209]. See *Festo III*, 344 F.3d at 1369 (“Usually, if the alleged equivalent represents later-developed technology (e.g., transistors in relation to vacuum tubes, or Velcro® in relation to fasteners) or technology that was not known in the relevant art, then it would not have been foreseeable.”).

[FN210]. See *id.* (“In contrast, old technology, while not always foreseeable, would more likely have

been foreseeable. Indeed, if the alleged equivalent were known in the prior art in the field of the invention, it certainly should have been foreseeable at the time of the amendment.”) (citations omitted).

[FN211]. Naturally, such an inquiry--positing the state of the art and the level of skill of the ordinary practitioner at some time, often a decade or so, in the past--is a difficult one.

By its very nature, objective unforeseeability depends on underlying factual issues relating to, for example, the state of the art and the understanding of a hypothetical person of ordinary skill in the art at the time of the amendment. Therefore, in determining whether an alleged equivalent would have been unforeseeable, a district court may hear expert testimony and consider other extrinsic evidence relating to the relevant factual inquiries.

Id.

[FN212]. Id.

[FN213]. See id. (“Although we cannot anticipate the instances of mere tangentialness that may arise, we can say that an amendment made to avoid prior art that contains the equivalent in question is not tangential; it is central to allowance of the claim.”) (citations omitted).

[FN214]. See [Pioneer Magnetics, Inc. v. Micro Linear Corp.](#), 330 F.3d 1352, 1357 (Fed. Cir. 2003) (holding that amendment made to overcome the prior art is not tangential and is also not a valid equivalent).

[FN215]. See id. at 1356 (“Only the public record of the patent prosecution, the prosecution history, can be a basis for such a reason. Otherwise the public notice function of the patent record would be undermined.”). Judge Newman, in dissent, recognizes that the complex factual questions require more than just an examination of the prosecution history. See [Festo III](#), 344 F.3d at 1385 (2003) (Newman, J., dissenting in part). (“All three classes of rebuttal raise questions of fact and all raise questions of first impression, requiring full and fair exploration of the issues with benefit of the procedures of trial.”).

[FN216]. See [Festo III](#), 344 F.3d at 1369 (holding that the “reason should be discernible from the prosecution history record, if the public notice function of a patent and its prosecution history is to have significance”). The Federal Circuit noted that limiting the inquiry to the public record of the prosecution history respects the public notice function of the patent system. Id. at 1369-70.

[FN217]. However, the factors relevant to determination of tangential relation are unlikely to reside in the prosecution record, for unrelated subject matter or unknown equivalents are unlikely to have been discussed by either the examiner or the applicant. The issue of “tangentialness” may require consideration of how the reason for an amendment affected the patentee's view that certain technology was extraneous. The prosecution record rarely discusses devices that are not prior art.

Id. at 1384 (Newman, J., dissenting in part).

[FN218]. Id. at 1370.

[FN219]. Id.

[FN220]. Id.

[FN221]. Such a reason, however, is unlikely to reside in the prosecution history. See *id.* at 1385 (Newman, J., dissenting in part) (“The court imposes the requirement that the inventor was actually prevented from describing an unknown equivalent, in order to rebut the presumption of surrender--and that the reason was contained in the prosecution history--a virtual impossibility.”).

[FN222]. See *id.* at 1382 (“It is improper simply to assume that all potential equivalents were surrendered in all cases, whatever the nature and scope of the original claims and whatever the relation of the amendment to the original claims. These aspects have wide implications, as the amici curiae recognized, and should not be decided by indirection and without discussion.”).

[FN223]. To be fair, the one saving grace, for the champions of certainty, is the unequivocal proclamation by the Federal Circuit that the intensely factual questions created by the layers of presumptions are firmly placed in the capable hands of the court and not subject to the whim of a jury. See *supra* note 207 (discussing role of court and jury in determining factual estoppel questions).

[FN224]. See *supra* notes 109-48 and accompanying text (discussing first en banc decision).

[FN225]. See *supra* notes 141-43 and accompanying text (discussing flexible bar).

[FN226]. See *supra* notes 134-46 and accompanying text (discussing complete bar rule).

[FN227]. See *Festo III*, 344 F.3d at 1382 n.2 (Newman, J., dissenting in part) (“Various amicus briefs pointed out the complex implications for patent prosecution, for it is customary to present broad and successively narrow claims, to rewrite or cancel claims, and to move elements between dependent and independent claims. The amici pointed out that such routine actions may now have unforeseeable consequences, and impose new pitfalls, costs, and burdens on inventors.”).

[FN228]. See *id.* at 1375-76 (“In any event, the new certainty rules for equivalents (a rebuttable presumption that narrowing amendments erect a complete bar), at least for a period of time, may disrupt as much certainty as they provide. In particular, these new rules are likely to influence both the patent acquisition and enforcement processes in unpredictable ways.”).

[FN229]. See *supra* note 23 and accompanying text (explaining a patent's prosecution history).

[FN230]. *Id.*

[FN231]. *Id.*

[FN232]. The vast majority of patent applications contain claims that are initially rejected in view of the prior art, and are only allowed after being amended. Patent prosecution is an iterative process in which the applicant typically submits claims that are thought to be allowable, the examiner rejects the claims in view of the prior art, and the applicant then amends the claims to traverse the examiner's patentability rejections.

Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 618 (Fed. Cir. 2000) (en banc), rev'd, 535 U.S. 722 (2002) (Michel, J., dissenting in part) (*Festo I*). The court also articulated:

It has been routine practice for patent solicitors to initially present broad claims to an invention, in the expectation of honing the claims in interaction with the examiner. As very few patent applications traverse the PTO without amendment or argument, few issued patents will be free of the

consequences of these changes in the law....

Id. at 638.

[FN233]. See, e.g., *supra* notes 124-25 and accompanying text.

[FN234]. With all due respect to my colleagues in the majority, the new bright line rule, as simple as it is hoped to be in application, wrongfully sets in place a regime that increases the cost and complexity of patent prosecution to the detriment of individual inventors, start-up companies, and others unable to bear these increased costs.

Festo I, 234 F.3d at 620.

[FN235]. See *Festo II*, 344 F.3d at 1366 (“If the amendment was not narrowing, then prosecution history estoppel does not apply.”).

[FN236]. See *id.* at 1375 (“In response to the demise of the flexible rule and the rise of new rules, an applicant must now avoid amendments....”).

[FN237]. If the PTO issues a first office action allowance, the claims as filed in the patent application appear in the final patent. This is rare. Moreover, it also means that a patent practitioner has submitted claims that are too narrow. In the face of a first office action allowance, a practitioner will often file a continuation application with broader claims in an attempt to acquire for the inventor the broadest patent monopoly possible. Moreover, a first office action allowance provides no notice of the scope of the claims, thus undermining the public notice function of the patent claims. See *Festo I*, 234 F.3d at 626 (“First-action allowances, with no real interchange or substantive commentary between the applicant and the examiner regarding any of the originally drafted claim limitations, provide no notice of the scope and meaning of those limitations beyond the words themselves as used in the written description and claims.”).

[FN238]. See *id.* at 622 (“[I]t is quite difficult for claim drafters to draft initial claims that adequately and accurately cover the ‘invention’ on the day the patent application is filed. Consequently, claims are commonly amended during prosecution to more particularly point out and distinctly claim that which is regarded to be the invention.”).

[FN239]. See *Festo III*, 344 F.3d at 1375 (2003) (Rader, J., concurring) (“In response to the demise of the flexible rule and the rise of new rules, an applicant must now... file more and increasingly specific claims....”); *Festo I*, 234 F.3d at 623 (Linn, J., dissenting in part) (“It will also require applicants to file in an original application numerous ‘narrow’ claims or, if ‘broad’ claims are sought, to be prepared to argue to the patent examiner, to the board of appeals, and to this court the impropriety of all rejections for patentability reasons, rather than to amend those claims, given the harsh consequences of amendments under the majority's new bright line rule.”).

[FN240]. Judge Plager, in the first en banc decision, recognized that narrow claims may be a result of the harsh consequences of the complete bar rule. See *Festo I*, 234 F.3d at 592 (Plager, J., concurring) (“Patent counsels may decide that past practice gives up too much under the new rules, and instead may start claiming narrowly with the hope of avoiding rejections and consequent amendments.”).

[FN241]. Judge Plager, in the first en banc decision, *Festo I*, speculated that the doctrine of equival-

ents would be used frequently to enforce the narrow claims prompted by the complete bar rule. See *id.* (“An unintended consequence, however, may be that patent litigation will lean ever more heavily on the doctrine of equivalents, especially in those cases in which the patent application, containing narrowly drawn claims, was approved without any amendment in the area that affects the accused product. The patentee may have little choice but to insist on enforcement under the doctrine of equivalents, if the patent is to be enforced at all.”).

[FN242]. Another possible effect of the complete bar rule is an increase in the number of claim rejections appealed by patent applicants. See *Festo I*, 234 F.3d at 618 (Michel, J., dissenting in part) (“Rather than acquiesce to patentability rejections and thereby surrender all recourse to the doctrine of equivalents, applicants will be increasingly likely to file administrative and judicial appeals.”). Perhaps, more patent applications will be abandoned, see *id.* (“Furthermore, this court's imposition of a complete bar creates a perverse incentive for patent applicants, particularly those who are financially unable to invoke the appeals process, to simply abandon their applications.”), or more ideas will be protected by trade secret.

In many cases, it may be more effective to protect an invention by maintaining it as a trade secret than by accepting a patent that will publicize the invention, but provide protection only from literal infringement.... As a result, the public may be deprived of useful teachings contained in patent applications that are simply abandoned after a rejection is made regarding a critical claim limitation.

Id.

[FN243]. In my opinion, the majority's new bright line rule eliminating all flexibility in the scope of claim limitations amended for a statutory purpose reflects an unjustified faith in the draftsman to select language to perfectly describe a new and unobvious invention at an early stage of the development process. The same limitations of language noted in selecting words to describe an invention in the first instance are no less present in selecting words to avoid an examiner's rejection of that original language for one statutory reason or another.

Festo I, 234 F.3d at 623 (Linn, J., dissenting in part).

[FN244]. See *supra* notes 174-76 and accompanying text (noting that amendments related to patentability are subject to estoppel).

[FN245]. See *Festo III*, 344 F.3d at 1367 (“If the patentee successfully establishes that the amendment was not for a reason of patentability, then prosecution history estoppel does not apply.”).

[FN246]. One possible avenue for the patent practitioner is an examiner interview. During prosecution, a patent attorney may have an interview with the examiner, either in person or by telephone. Often, an attorney may discuss claim amendments with the examiner informally without amassing a record in the prosecution history. In this manner, a patent attorney may avoid unnecessary or unfruitful amendments that may otherwise lead to estoppel.

[FN247]. A claim amendment made during prosecution thus has an impact on issued patent during the enforcement process. Patent prosecution occurs many years before enforcement of an issued patent through litigation. This temporal disjunction, especially in the light of rapidly changing precedent, has uncertain consequences. In *Festo III*, the court characterizes this disruption:

With exception added to exception, and presumptions rebutted by still newer presumptions,

a practitioner can scarcely predict the scope of claims years in the future, when they are likely to be enforced, let alone the scope of claims drafted a few years ago when amendments did not potentially forfeit claim scope.

See [Festo III](#), 344 F.3d at 1376.

[FN248]. *Id.* at 1367.

[FN249]. See *supra* notes 208-21 and accompanying text (explaining the three rebuttal criteria).

[FN250]. See *supra* notes 208-11 and accompanying text (discussing the first rebuttal standard).

[FN251]. *Id.*

[FN252]. See [Festo III](#), 344 F.3d at 1368 n.3 (“We recognize that rebuttal of the presumption may be subject to underlying facts, which we discuss in more detail below. Nonetheless, the resolution of factual issues underlying a legal question may properly be decided by the court.”).

[FN253]. See *id.* at 1369 (discussing unforeseeable equivalent); see also *supra* notes 208-11 (discussing one of ordinary skill in the art).

[FN254]. See *id.* (“By its very nature, objective unforeseeability depends on underlying factual issues relating to, for example, the state of the art and the understanding of a hypothetical person of ordinary skill in the art at the time of the amendment.”).

[FN255]. See *id.* (“Therefore, in determining whether an alleged equivalent would have been unforeseeable, a district court may hear expert testimony and consider other extrinsic evidence relating to the relevant factual inquiries.”).

[FN256]. *Id.*

[FN257]. *Id.*

[FN258]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 535 U.S. 722, 740 (2002) (Festo II) (“The patentee, as the author of the claim language, may be expected to draft claims encompassing readily known equivalents.”).

[FN259]. Interestingly, this restrictive rule seems to have its origins in a line of Federal Circuit law prohibiting equivalents for subject matter that is disclosed in the patent specification but remains unclaimed. A patent practitioner often includes in the specification of a patent a very detailed description of every conceivable aspect of the claimed invention. To require the applicant to draft a claim for every nuance of the disclosed invention is impractical. Such a restrictive rule does violence to the public disclosure function of the patent system. Instead of broad disclosures of the subject matter surrounding an invention, the rule encourages applicants, in order to decrease the chances of estoppel, to narrow their description only to that which appears in the claims. See [Johnson & Johnston Assoc. v. R.E. Serv. Co.](#), 285 F.3d 1046, 1055 (Fed. Cir. 2002) (en banc) (holding that disclosed yet unclaimed subject matter is not included in a permissible range of equivalents). This recent Federal Circuit law seems to be an extension of earlier precedent which holds that an asserted equivalent, to be valid, need not be disclosed in the text of the patent itself. See [Warner-Jenkinson Co. v. Hilton Davis](#)

[Chemical Co.](#), 520 U.S. 17, 37 (1997) (rejecting the proposition “that equivalents must not only be known, but must also be actually disclosed in the patent in order for such equivalents to infringe upon the patent”); [Winans v. Denmead](#), 56 U.S. (15 How.) 330, 343 (1853) (holding irrelevant the fact that an equivalent “is embodied in a form not described, and in terms claimed by the patentee.”); [Pall Corp. v. Micron Separations, Inc.](#), 66 F.3d 1211, 1220 (Fed. Cir. 1995) (“It is not controlling whether the inventor foresaw and described this potential equivalent at the time the patent application was filed.”).

[FN260]. However, this practice has limits. It is unreasonable to expect a patent drafter to enumerate every foreseeable equivalent in claim after claim. First, this would increase the length of patent applications and further burden an already overtaxed patent examining corps. Moreover, the claims must be supported by the written description portion of the patent application. The burden of describing every foreseeable equivalent would lengthen the patent application and increase the drafter's fees. Second, patent claims cost money. The PTO charges additional fees for filing more than twenty claims. See Patents, Trademarks and Copyrights, 37 C.F.R. § 1.16(c) (2004) (enumerating fees). Finally, the average patent practitioner, just like the average inventor, is probably not capable of listing every foreseeable equivalent. In many cases, an exhaustive list of equivalent structures or functions of those recited in claim can occupy page after page of text.

[FN261]. See *supra* notes 57-65 and accompanying text (discussing insubstantial differences).

[FN262]. [A] party who merely substitutes another old ingredient for one of the ingredients of the patented combination is an infringer if the substitute performs the same function as the ingredient for which it is so substituted, and it appears that it was well-known at the date of the patent that it was adaptable to that use.

[Imhaeuser v. Buerk](#), 101 U.S. 647, 656 (1879).

[FN263]. See [Graver Tank & Mfg. Co v. Linde Air Prods. Co.](#), 339 U.S. 605, 609 (1950) (holding that in doctrine of equivalents analysis “[a]n important factor is whether a person reasonably skilled in the art would have known of the interchangeability of an ingredient”).

[FN264]. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558, 619 (Fed. Cir. 2000) (en banc), rev'd, 535 U.S. 722 (2002) (Festo I) (Linn, J., dissenting in part) (“The new regime also... changes the rules under which prosecution strategies were formulated for thousands of extant patents no longer subject to correction.”). The changes announced in the three Festo opinions apply retroactively to patents that were prosecuted or issued under the prior, more lenient precedent. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 344 F.3d 1359, 1370 n.4 (2003) (Festo III) (“Consistent with Supreme Court precedent, the holdings of that Court and our own regarding the Festo presumption of surrender and its rebuttal apply to all granted patents and to all pending litigation that has not been concluded with a final judgment, including appeals.”). A practitioner, relying on prior precedent, would make different choices in amending claims and prosecuting patent applications. Notably, the doctrine of equivalents was a viable alternative before Festo as claim amendments did not carry the penalty they do today. The strategy of a prudent patent practitioner was considerably altered by the Festo trilogy.

[FN265]. See *supra* notes 141-43 and accompanying text (discussing flexible bar).

[FN266]. Id.

[FN267]. See *supra* notes 133-47 and accompanying text (discussing effect of complete bar rule).

[FN268]. See *Festo III*, 344 F.3d at 1370 n.4 (“Consistent with Supreme Court precedent, the holdings of that Court and our own regarding the Festo presumption of surrender and its rebuttal apply to all granted patents and to all pending litigation that has not been concluded with a final judgment, including appeals.”).

[FN269]. See *supra* notes 212-17 and accompanying text (discussing tangentialness).

[FN270]. See *supra* notes 218-21 and accompanying text (discussing catch all category).

[FN271]. For example, a patentee cannot escape the Festo presumptions by shielding itself with the specter of a new matter rejection if it was capable of describing the matter in the patent application. See *Glaxo Wellcome, Inc. v. Impax Labs., Inc.*, 356 F.3d 1348 (Fed. Cir. 2004) (holding that a patentee cannot satisfy the rebuttal criteria by relying on a failure to include the asserted equivalent in the text of the specification when it could have included it in the original application). In general, the claims of a patent must be supported by its written description. If a claim encompassing a foreseeable equivalent is added to the patent application without adequate support in the written description, that claim constitutes impermissible new matter. See *Kolmes v. World Fibers Corp.*, 107 F.3d 1534, 1539 (Fed. Cir. 1997) (holding that the new matter doctrine prevents an applicant from adding new subject matter to the claims unless the specification shows that the inventor had support for the addition at the time of the original filing); see also 35 U.S.C. § 132 (2000); *TurboCare Div. of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001) (holding that the new matter doctrine ensures the temporal integrity of the amendment process in the Patent Office and does not apply to nontextual infringement).

[FN272]. See *supra* notes 212-17 and accompanying text (discussing tangential rebuttal criterion).

[FN273]. For example, a tangential amendment is one that merely corrects punctuation or misspelling in the claims. Naturally, such an amendment does not evince an intention to relinquish subject matter.

[FN274]. The inadequacy of language plagues every patent application. It is difficult to describe in language the often ephemeral nature of inventive genius. Judge Newman notes that the inadequacy of language is one reason for the existence of the doctrine of equivalents. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, 1385 (2003) (*Festo III*) (Newman, J., dissenting in part) (“Insofar as the ‘inadequacy of language’ is considered as a ground of rebuttal, the subject engaged Judge Hand in *Philip A. Hunt Co. v. Mallinckrodt Chem. Works*, 177 F.2d 583 (2d Cir. 1949), who observed that ‘obviously it is impossible to enumerate all possible variants. Indeed, some degree of permissible latitude would seem to follow from the doctrine of equivalents, which was devised to eke out verbal insufficiencies of claims (citation omitted).’”).

[FN275]. See *Festo III*, 344 F.3d at 1375 (“For instance, the Supreme Court’s stringent estoppel presumptions also entail considerable unanticipated arbitrariness because examiners differ. Some examiners aggressively seek to narrow and define claims. Others demand far fewer amendments. Thus the application of the forfeiture presumption often depends on the luck of the examiner draw.”).

[FN276]. *Id.*

[FN277]. Such a situation is not uncommon. Anecdotally, those who prosecute patent applications would confirm that examiners differ and that, in the same situation, one might require a claim amendment when another would not. Moreover, some patent examiners are more likely to be responsive to telephone interviews, the substance of which may remain off the record. For a quantitative analysis of the differences between patent examiners and examining groups, see Douglas Lichtman, [Rethinking Prosecution History Estoppel](#), 71 U. Chi. L. Rev. 151 (2004).

[FN278]. See *supra* notes 125-28, 134-39, 146-49, 225, and accompanying text (noting that Festo emasculates the doctrine of equivalents).

[FN279]. See Kevin A. Wolff et al., The Unspoken Loss in Shareholder Value: Patent Rights Take a Hit, 9 Mealey's Litig. Rep.: Intellect. Prop. 41, 46-47 (2001) ("The cost to prosecute a patent with any breadth of protection just went up.... The bottom line for those that manage intellectual property is that increased risk will bring increased cost."); Margaret Quay, U.S. Patent Law Strikes a Blow, Elecs. Times, Feb. 19, 2001, at 20 (asserting that Festo "would make patent filing potentially more difficult and expensive--possible even prohibitively so for small companies and individuals").

[FN280]. Of course, the expense of the entire patent procurement process acts as a significant barrier for the individual inventor. Attorney's fees alone for drafting even a simple patent application can run to ten-thousand dollars. The same amount can be spent to prosecute the patent to issuance over its two to three year pendency in the Patent Office. A relative bargain, fees expended by an individual inventor or small corporation for filing a patent application total \$385.00. 37 C.F.R. 1.16(a) (2004).

[FN281]. The USPTO refers to an individual inventor or small business concern as a small entity. 37 C.F.R. § 1.27 (2004).

[FN282]. See *supra* notes 196-221 and accompanying text (discussing complex web of presumptions).

[FN283]. To successfully maintain a patent infringement lawsuit invariably costs hundreds of thousands of dollars, leaving a contingent fee arrangement with a plaintiff's attorney the only option for an individual inventor wishing to enforce a patent. See, e.g., Joseph Hosteny, The Ideal Contingent Fee Client, Intell. Prop. Today, July 2002, at 32-33 (discussing contingent fee patent litigation).

[FN284]. The theory is that it is easier to enforce a more robust set of patent rights. Traditionally, the doctrine of equivalents, a second avenue for proving infringement, gave the patentee a second chance at enforcing a patent. See *supra* notes 32-71 (discussing doctrine of equivalents). The current version of the doctrine of equivalents, weakened by Festo, hampers the patentee in the enforcement process.

[FN285]. It is axiomatic that stare decisis "promotes the evenhanded, predictable, and consistent development of legal principles, fosters reliance on judicial decisions and contributes to the actual and perceived integrity of the judicial process." [Payne v. Tennessee](#), 501 U.S. 808, 827 (1991).

[FN286]. As Judge Rader explained:

To make my point clearer, much of the unpredictability of these changes lies in the pace of

change. By common law standards, this court's jurisprudence moves at a lightning pace. This pace can engender uncertainty about the consequences of each new rule.... Trial courts and practitioners have little time to assess the full impact of one rule before hit with another or an exception to the first. With exception added to exception, and presumptions rebutted by still newer presumptions, a practitioner can scarcely predict the scope of claims years in the future, when they are likely to be enforced, let alone the scope of claims drafted a few years ago when amendments did not potentially forfeit claim scope. In other words, the pace of the creation of new rules is itself disrupting the fundamental principle of certainty in the scope of patent claims.

[Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 344 F.3d 1359, 1376 (2003) (Festo III) (Rader, J., concurring). Judge Plager recognized the unsettling effect of the marked change in the first en banc decision. See [Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.](#), 234 F.3d 558, 592 (Fed. Cir. 2000) (en banc), rev'd, 535 U.S. 722 (2002) (Festo I) (Plager, J., concurring) (“Unfortunately, this attempt at injecting certainty into the doctrine contains the potential for unintended consequences, consequences that may do nothing but exacerbate the problem.”).

[FN287]. See [Festo III](#), 344 F.3d at 1375 (Rader, J., concurring) (“Without belaboring the point, I venture to suggest that, at the pace of these changes in fundamental patent law, the noble objective of bringing more certainty to the doctrine of equivalents nonetheless exacts a price in unintended consequences.”).

[FN288]. Thus, the Federal Circuit, in its Festo decisions, attempted to create certainty in the enforcement process by upsetting settled expectations in the procurement process. See [Festo III](#), 344 F.3d at 1375 (“This court and the Supreme Court necessarily disturbed some settled expectations in the prosecution process, to achieve more certainty in the enforcement process.”).

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